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1	09751033(Online);03795136 (Print)	International Conference on Advanced Technologies for Management of Ballast Water and Biofouling	60	71
2	0304386X	SESTEC2014	39	56
3	85918597	ISMC	2	19
4	9788190332149	DAEBRNS National Laser Symposium		706
5	9788190332156	DAEBRNS National Laser Symposium, NLS23,		710
6	9788190332163	DAEBRNS National Laser Symposium, 25 December, 2015,NLS24	774	776
7	21016275	EPJ Web of Conferences	760	767
8	22147853	Materials Today Proceedings		745
9	9788190332163	DAEBRNS National Laser Symposium, 25 December, 2015,NLS24	774	
10	9780735413788	AIP Conference Proceedings	100	243,245
11	9788190332170	National Laser Symposium, NLS25, KIIT University, Dec. 20-23, 2016,NLS25	720	722
12	8188513768	Interdisciplinary Symposium on Materials Chemistry (ISMC2016)	777	779
13	0168583X	International Conference on Radiation Effects in Insulators (REI18)	678	682
14	9781567004618	International Symposium on Advances in Computational Heat Transfer	781	783
15	9780735416345	DAE SSPS2017	392	411,413
16	17426596	Journal of Physics Conference Series	739	740
17	9789388653411	Photonics2018	720	726
18	9780735416345	AIP Conference Proceedings	392	587
19	8188513849	TSRP2018	650	668

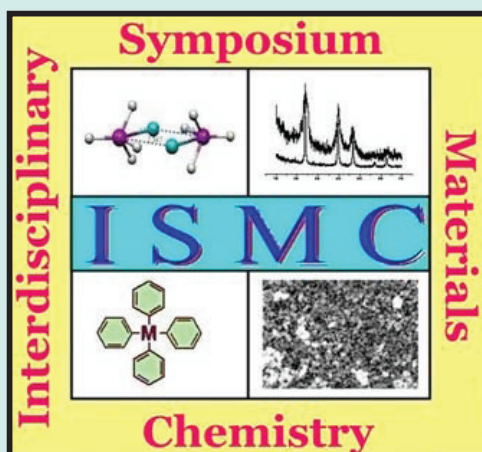


ISM C-2014

DAE-BRNS
5th INTERDISCIPLINARY SYMPOSIUM
ON
MATERIALS CHEMISTRY

December 9-13, 2014

Venue: Bhabha Atomic Research Centre, Mumbai



Organized by
Society for Materials Chemistry
and
Chemistry Division
Bhabha Atomic Research Centre
Trombay, Mumbai-400 085
India

Supported by
Board of Research in Nuclear Sciences
Department of Atomic Energy,
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ISMC – 2014

Proceedings of

DAE-BRNS

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DAE-BRNS 5th Interdisciplinary Symposium on Materials Chemistry

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PREFACE

Since inception of the first ISMC in 2006, this series of symposia are organized biennially by Chemistry Division, BARC and Society for Materials Chemistry. The earlier symposia, erstwhile "International Symposium on Materials Chemistry (ISMC)" of this series were organized in December of 2006, 2008, 2010 and 2012. The legacy and rich traditions of this biennial scientific event are reflected in the DAE-BRNS 5th Interdisciplinary Symposium on Materials Chemistry (ISMC-2014) being organized during 9-13 December, 2014. An overwhelming response from materials chemistry community from India and abroad is a manifestation of ever growing interest in materials chemistry research. The ISMC provides a common platform to scientists working on different aspects of materials chemistry to share their innovative ideas in materials chemistry and evolve new collaborative programs. The primary objective of ISMC has been to cover contemporary and emerging research areas in Materials Chemistry with an obvious bias towards materials for energy, environment and health. The 5th ISMC-2014 intends to focus on research areas in materials chemistry which include: nuclear materials; high purity materials; nanomaterials and clusters; carbon based materials; fuel cell materials and other electro-ceramics; biomaterials; polymers and soft condensed matter; materials for energy conversion; thin films and surface chemistry; magnetic materials; catalysis; chemical sensors; organic and organometallic compounds; computational material chemistry.

The ISMC series of symposium are regarded as highly successful by international peers and reviewers. The deliberation of the five days ISMC-2014 will comprise of about 35 invited lectures, 8 short lectures and about 400 posters by researchers from India and abroad. The Royal Society of Chemistry, UK has been consented to publish invited lectures after peer review process in web version of Journal of Materials Chemistry- A/B/ C.

Chemistry Division is one of the oldest Divisions which came into being at the early stages of the Indian Atomic Energy programme. Since its inception, the Division has served to nucleate research and development activities relevant to the programmes of atomic energy. As several of these programmes blossomed with time, the Division underwent re-organizational changes from time to time. Chemistry Division has six sections, viz., Synthesis & Pure Materials Section (SPMS), Fuel Cell Materials & Catalysis Section (FCMCS), Solid State Chemistry Section (SSCS), Structural Chemistry Section (SCS), Thermal & Interfacial Section (TICS) and Materials Chemistry Section (MCS). The research output of the Division is manifested in terms of developing know-how for various products and solutions to chemical problems relevant to our programmes. Divisional current research activities encompasses broad areas like: hydrogen energy: generation, storage and mitigation; catalysis; high purity materials; fuel cell materials; chemistry of nano-materials and composites; cluster chemistry; organometallic chemistry; nuclear materials; functional materials.

With active involvement and interest of scientists working in materials chemistry, the *Society of Materials Chemistry (SMC)* was formed in 2007 with Chemistry Division, BARC as its head quarter. The Society has grown since its inception both in stature and popularity as is evident from considerable increase of life membership from 114 in April 2009 to around 800 now. Besides ISMCs, Society also organizes national workshops every odd year and special lectures on emerging subject areas by eminent scientists. Society publishes 3 thematic issues of SMC Bulletins per year.

For a scientific event of this nature the organizing committee received help, cooperation, support, guidance and encouragement from different quarters and we are indebted to all of them. Organizing Committee is grateful to Board of Research in Nuclear Sciences (BRNS) for financial assistance. The organizing committee sincerely expresses their thanks to BARC authorities for giving consent to organize the 5th ISMC 2014, Patrons for their encouragement, National advisory committee for their invaluable suggestions, Session chairpersons, invited speakers, reviewers for assessment of abstracts and to the members of the Symposium organizing committees for their untiring efforts. We thank all the faculty members, research scholars and students for participation in ISMC-2014. Sustained support and cooperation

extended by scientific, technical and other staff members of Chemistry Division in organizing the ISMC-2104 is gratefully acknowledged.

The organizing committee wishes all the participants a pleasant and comfortable stay in Mumbai and scientifically rewarding experience.

Symposium Organising Committee

EDITORIAL

This symposium, the fifth in series of DAE-BRNS Symposia on Materials Chemistry, has covered almost all the contemporary research areas of materials chemistry like materials for energy conversion, biomaterials, carbon based materials, chemical sensors, fuel cell materials and other electro-ceramics, polymers and soft condensed matters, thin films and surface chemistry, organic and organometallics, high purity materials, nanomaterials and clusters to acquaint ourselves with the advancement made in these emerging areas. Topics like nuclear materials, magnetic materials, catalysis and computational materials chemistry continue to be important facet of ISMC series of symposia. Several eminent material scientists from India and abroad have accepted our invitations to share their proficiency with the participants of ISMC-2014.

The over whelming response towards contributory abstracts from the universities and research institutions from India has been really heartening though it has made the reviewing process a bit more strenuous. We place on record our sincere thanks to all the reviewers drawn from the scientific community in BARC for their dedicated efforts in evaluating the large number of abstracts in timely manner. The peer reviewed abstracts have been suitably organized under fourteen categories reflecting the depth and scope of respective research areas. During compilation of the proceedings, the editorial team took the liberty to edit some of the abstracts mainly to keep uniformity in the formatting. While doing so, utmost care was taken to retain all the scientific content intact as provided by the authors.

We are grateful to all the Patrons and the members of the National Advisory Committee of ISMC-2014 for their valuable guidance and suggestions. The guidance, support and encouragement received from Dr. B.N. Jagatap, Director, Chemistry Group and Chairman, Symposium Organizing Committee, ISMC-2014 and other members of the Symposium Organizing Committee during the entire process of publication of this volume have been really gratifying and are sincerely acknowledged. It is our pleasure to thank the staff members of Chemistry Division and Chemistry Group for their unstinted support.

The Board of Research in Nuclear Sciences (BRNS) has been instrumental in the publication of this volume by their financial support and we gratefully acknowledge the same.

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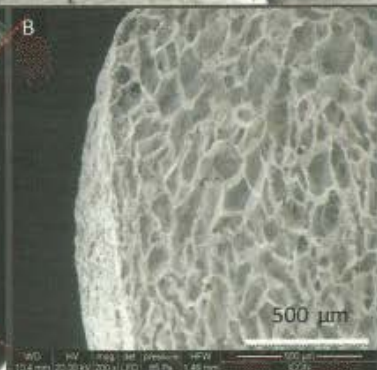
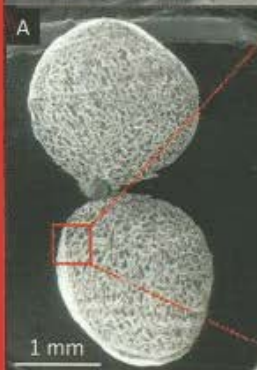
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International Conference on
Advanced Technologies
for Management of
Ballast Water and Biofouling
(MABB 2014)
4 – 7 March 2014

*Combat Bioinvasion !
Conserve Biodiversity !!*

Souvenir & Abstracts

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ESSO – NIOT
Chennai, India



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Dr. Shailesh Nayak
Secretary
Ministry of Earth Sciences
Govt. of India



Marine bioinvasion caused by the ballast water discharges with exotic organisms affecting the endemic biodiversity is alarming due to the increasing volume of seaborne trade across the geographical areas. The International Maritime Organization has adopted the new guidelines in the Ballast Water Management Convention (2004) for the control and management of ships and requested its Member States to minimize the transfer of invasive aquatic species. An estimated 68,000 merchant vessels need to meet the mandatory requirement of Ballast Water Treatment by 2020 which includes 1,029 ships registered in India.

The Earth System Sciences Organization-National Institute of Ocean Technology (ESSO-NIOT), Chennai, under the Ministry of Earth Sciences, is taking pioneering attempts for the effective mitigation of marine bio-fouling through research as well as ballast water management in the country. The ESSO-NIOT is in the process of developing a shore based test facility for the ballast water treatment technology to test and validate Ballast Water Treatment Systems (BWTS), after successful lab based testing facility, as requested by the Ministry of Shipping, Govt. of India.

As part of the global initiatives, to mitigate the problems associated with bio-fouling and invasive species, there is a need for a comprehensive holistic plan to preserve the endemic marine floral and faunal diversity of the country by adopting the recent technological innovations. With this objective, the ESSO-NIOT is organizing an International Conference on “*Advanced Technologies for Management of Ballast water and Biofouling*” (MABB 2014) with the motto of *Combat Bioinvasion! Conserve Biodiversity!*.

I am confident that the delegates at the conference would share their expertise and take stock of the technological advancements in the fields of biofouling and bioinvasion to adopt a novel strategic action plan to protect the world oceans for the mankind.

I extend my warm greetings and compliments to the participants and my fellow colleagues of the ESSO-NIOT, partner institutions and wish the conference all success.

(Shailesh Nayak)



सत्यमेव जयते

के. विजयराघवन

K. VijayRaghavan



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DEPARTMENT OF BIOTECHNOLOGY
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Eversince the introduction of steel hulled vessels a century ago water has been used as the proven ballast to stabilize them. While ballast is considered essential for safe shipping operations, invasive aquatic species that comes along with ballast water are considered as a major threat to the healthy oceans. Preventive measures towards the entry of alien and harmful species into the ecosystem are most important to protect the endemic marine biodiversity of any geographical zone.

India, being the member state of the International Maritime Organization's Ballast Water Management Convention, is much inquisitive in implementing the guidelines for the control and management of ship's ballast water to minimize the transfer of harmful aquatic organisms and pathogens. Every institution in the field of biofouling research is in the process of discovering environment friendly anti fouling compounds from natural sources to overcome the recent ban imposed on organotin-based marinecoatings and to meet the urgent need for green anti-fouling products in the maritime countries such as India.

At this juncture, I am delighted to hear that the National Institute of Ocean Technology along with the Bhaba Atomic Research Centre is organizing an International conference on "**Advanced Technologies for Management of Ballast Water and Biofouling**" supported by the Ministry of Earth Sciences and the International Biodeterioration and Biodegradation Society, UK.

I am confident that the scheduled delegations during the 3 days of the conference would help the Nation to build its plan for the future ballast water management initiatives and I wish the conference a grand success.


(K. VijayRaghavan)

डा० विश्वपति त्रिवेदी
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MESSAGE

I am very happy to know that Earth System Sciences Organisation – National Institute of Ocean Technology (ESSO-NIOT) is conducting an International Conference on Advanced Technologies for Management of Ballast Water and Biofouling (MABB 2014). The theme of the conference is of topical interest since management of ballast water in ships is a cause of major concern for the maritime nations of the world. India, with its numerous ports and flourishing maritime activities, is at high risk of bioinvasion via ballast water and, therefore, development of a management strategy is the need of the hour. The international Maritime Organisation (IMO) has already initiated preventive measures for management and prevention of ballast water related bioinvasion. Likewise, biofouling is a common operational problem faced by ships, cooling water system of power plants, moored oceanographic instruments and similar such structures in aquatic environment. Addressing this issue with advanced methods and technologies for marine applications which are eco-friendly in nature is very much required. The conference would be an unprecedented event for interaction with the scientists and experts across the world to know the latest research innovations in the field of Ballast Water Management and Biofouling. The sessions and plenary planned for the conference are well-timed and meticulous.

I am sure that MABB 2014 will certainly add to the country's vision of building an effective and competent source of ballast water management and biofouling control for the current and future industrial requirements. I extend my best wishes and greetings to ESSO-NIOT for organising such an industry-oriented and inspiring fest that exudes magnificence. When Technology merges with Science, wonderful Solutions are born. To my knowledge, ESSO-National Institute of Ocean Technology (ESSO-NIOT) is a world-class institute for development of ocean-technology in India and the Ministry of Shipping is proud of ESSO-NIOT for taking up this huge responsibility. I wish for its grand success.

(Dr. Vishwapati Trivedi)



FOREWORD

Ballast water and Biofouling are two important aspects concerning the maritime nations. In the marine realm, most of the bioinvasions have been attributed to ballast water used to stabilize ocean-going vessels. Marine discharge of ballast water causes spread of viruses, bacteria, microbes, small invertebrates, eggs, cysts and larvae of various species to new habitats. The tremendous and continuing increase in the volume of seaborne trade has increased the threat to marine biodiversity and the effects in many areas of the world have been devastating. Biofouling is an impediment in all maritime activities that involve exposure of materials to seawater. Ship-borne fouling has also been known to contribute to bioinvasion.

The Earth System Sciences Organisation – National Institute of Ocean Technology (ESSO-NIOT) has initiated research and development for ballast water management as well as eco-friendly measures of biofouling control. The Ballast Water Treatment Technology Test Facility being set up by the institute will be one of its kind in the country and the second in tropical region.

The International Conference on Advanced Technologies for Management of Ballast Water and Biofouling (MABB 2014) being organised by (ESSO-NIOT), Chennai from 4 – 7 March, 2014 would address the two specific but closely related issues of ballast water and biofouling by providing a meeting ground for researchers, users and policy makers in the areas of Ballast Water Management (BWM), marine bioinvasion, biofilm and biofouling control to discuss the latest trends. It would also be an excellent forum for new business ideas and professional development.

I extend a hearty welcome to all the delegates visiting ESSO-NIOT on this occasion. I wish all the very best for the grand success of MABB 2014.

Dr. M.A. ATMANAND

Director, ESSO-NIOT, Chennai

PREFACE

The spread of invasive species is one of the greatest threats to many ecosystems in the world. In the marine realm, most of the bioinvasions have been attributed to ballast water used to stabilize ocean-going vessels. Marine discharge of ballast water causes spread of viruses, bacteria, microbes, small invertebrates, eggs, cysts and larvae of various species to new habitats. The tremendous and continuing increase in the volume of seaborne trade has increased the threat to marine biodiversity and the effects in many areas of the world have been devastating. Considering the gravity of the impact of ballast water in spreading bioinvasion, the International Maritime Organization (IMO) has initiated preventive measures to divest ballast water of all biological organisms that can potentially invade a new habitat and proliferate therein.

Cooling water system of coastal power plants, moored oceanographic instruments, ship hulls, aquaculture framework and similar such structures in the marine environment face a common operational problem - biofouling. Ship-borne fouling has also been known to contribute to bioinvasion. Biofouling is an impediment in all maritime activities that involve exposure of materials to seawater.

This International Conference on Advanced Technologies for Management of Ballast Water and Biofouling (MABB 2014) is conceived to address these two specific but closely related issues by providing a meeting ground for researchers, users and policy makers in the areas of Ballast Water Management (BWM), marine bioinvasion, biofilm and biofouling control to discuss the latest trends by means of presentation of their current work. The conference promises to shed quality insights leading to healthy debates on these topics, as well as to provide an excellent forum for new business ideas and professional development.

The Earth System Sciences Organization - National Institute of Ocean Technology (ESSO - NIOT), Ministry of Earth Sciences, Govt. of India, has taken the initiative to organize this conference jointly with the Biofouling and Biofilm Processes Section (Water and Steam Chemistry Division, WSCD) of the Bhabha Atomic Research Centre (BARC), Kalpakkam and the International Biodeterioration and Biodegradation Society (IBBS), U.K.

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**International Conference on Advanced Technologies for
Management of Ballast Water and Biofouling (MABB 2014)
4th - 7th March, 2014**

Programme

Combat Bioinvasion! Conserve Biodiversity!!

Time (Hrs)		Activities	Page No.
From	To		
Tuesday, 4th March 2014			
18:30	21:00	Meet & Greet Venue: Madras Race Course Club	
Wednesday, 5th March 2014			
08.30	09.30	Registration of the participants	
9.30		Inauguration of the conference	
		Invocation & Lighting of the traditional lamp	
		Welcome address	
		Presidential address	
		About the conference	
		Address by Chief Guest	
		Release of Souvenir /Presentation of mementos	
		Vote of thanks	
10.50	11.00	Group Photo Venue: Portico of SagarSangamam Complex	
11.00	11.10	Inauguration of stalls	
11.10	11.30	High Tea Venue: Manthan Hall	
11.30	12.10	Keynote address The Bacterial Basis of Biofouling Dr.Hadfield M.G. University of Hawaii, U.S.A.	1
Session – 1: Ballast Water and Ecological Consequences			
12.10	12:40	Plenary talk –1 Ballast Water Treatment Testing and Investigations into the RiskRelease Relationship: Recent Research Activities of the Great Ships Initiative, USA. Dr. Allegra Cangelosi Meghana Desai (Northeast Midwest Institute (Great Ships Initiative)), Matthew Teneyck (University of Wisconsin Superior) and Allegra Cangelosi (Northeast Midwest Institute (Great Ships Initiative))	2

12.40	12.55	Port risk assessment for ballast water managements in republic of Korea Eun-Chan Kim, Jeong-Hwan Oh and Seung-Guk Lee KIOST, Korea	2
12.55	13.45	Lunch Venue: Manthan Hall	
		Session – 2: Ballast Water Monitoring and Management	
13.45	14.15	Plenary talk 2 Enforcement and compliance with respect to Ballast Water Convention Mr. D. Mehrotra IOMOU, Goa	3
14.15	14.30	Progress, Challenges and the Way Forward on Ballast Water Management in Malaysia Cheryl Rita Kaur MIMA, Malaysia	4
14.30	14.45	Challenges and solutions from certification testing and their implications for the practical implementation of ballast water management Frank Fuhr, Marcel Veldhuis, Etienne Brutel de La Rivière and Isabel van der Star MEA-nl, the Netherlands	4
14.45	15.00	An Analysis on Various Ballast Water Treatment Techniques for ORV SagarNidhi Rajasekhar D, Deepak Sankar P S, Anantha Krishna Rao, Narendra Kumar D, Siva Chidambaram, Rama Sundaram, K. VMC, NIOT	5
15.00	15.15	Effect of pH on flocculation of microalgal biomass during the growth stages of chlorophycean microalgae <i>Chlorella vulgaris</i> (JF894249 & JF894250) (JF894249 & JF894250) Magesh Peter D., Kirubakaran R, Mary LeemaThilakam J., Mehumuna Begum, Dharani. G., Vijayakumaran. M. &Atmanand. M. A. ESSO-NIOT, Chennai	5
15.15	15.30	Coffee break Venue: Manthan Hall	
		Session – 3: Advanced Ballast Water Treatment Technologies	
15.30	16.00	Plenary talk – 3 Ships and invasive species: from testing ballast water treatment systems to the development of rapid and cost-effective on-board compliance and self-monitoring techniques Dr. Louis Peperzak NIOZ, The Netherlands	6
16.00	16.15	Ballast Water Treatment Using Hydrodynamic Cavitation Anjan Mukherjee, Pratik Sangave and Aniruddha B Pandit, HyCa Technologies Pvt. Ltd., 176, UdyogBhavan, Sonawala Road, Goregaon (E), Mumbai 400063 INDIA	7
16.15	16.30	CFD analysis for a ballast free ship design Avinash Godey, Misra Suresh Chandra and Sha Om Prakash Indian Maritime University Visakhapatnam	7

16.30	16.45	Establishment of Ballast Water Treatment Technology – Test facility (BWTT-TF) by ESSO-NIOT KrupaRatnam, S. Rajaguru, V. P. LimnaMol, J. Santhanakumar, K. Thirupathi, G. Dharani, A. Ganesh Kumar, VijayaRavichandran, S.V.S. Phani Kumar, M. Vijayakumaran, D. Rajasekhar, R. Kirubagaran, M. A. Atmanand	8
16.45	17.00	Chlorination for ballast water treatment: relative survival of copepod zooplankton Mohamed Ershath MI, P. Sriyutha Murthy ¹ , V. P. Venugopalan and K. Altaff.	9
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10:30	10.45	Valve movement pattern in the green mussel (<i>Perna viridis</i>) in response to continuous chlorination Venkatnarayanan S (BARC, Kalpakkam), Sriyutha Murthy P (BARC, Kalpakkam), Kirubakaran R (ESSO-NIOT, Chennai) and Venugopalan V.P (BARC, Kalpakkam)	32
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14.00	14.30	Plenary talk – 6 Towards green antifouling technologies in industrial cooling water systems Dr. Rajagopal S. ¹ Department of Animal Ecology and Ecophysiology, Institute for Wetland and Water Research, Radboud University Nijmegen, Heyendaalseweg 635, 6525 AJ Nijmegen, The Netherlands ² Institute for Marine Resources and Ecosystem Studies (IMARES), Wageningen University, Ambachtsweg 8A, 1785 AJ Den Helder, The Netherlands	37
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11.45	12.00	TiTaN's Ballast Water Treatment System - Process and Performance T. Jeyananth (TiTAN, Chennai), R. Nagarajan (TiTAN, Chennai), N. Sivagnanam (RT Safe Ballast Private Limited) and L. Vedaprakash (TiTAN, Chennai)	48
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Combat Bioinvasion! Conserve Biodiversity!!

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Profile

National Institute of Ocean Technology (NIOT)

The major aim of starting NIOT under the Ministry of Earth Sciences, is to develop reliable indigenous technology to solve the various engineering problems associated with harvesting of non-living and living resources in the Indian Exclusive Economic Zone (EEZ), which is about two-thirds of the land area of India.

Mission Statement

- To develop world class technologies and their applications for sustainable utilization of ocean resources.
- To provide competitive, value added technical services and solutions to organizations working in the oceans.
- To develop a knowledgebase and institutional capabilities in India for management of ocean resources and environment.

The institute carries out the following:

- Development of technology related to the country's needs in the field of ocean science and technology including deep seabed mining, ocean energy and ocean observations systems, in consonance with ocean policy and national priorities.
- Utilizing the knowledge and experience gained through research and development in ocean sciences in scientific institutions within the country and keeping in view the need to adhere to international quality systems, cost effectiveness and preservation of the environment.
- Research and development in marine sensors, systems, ocean acoustics and ocean electronics.
- Improvement of existing indigenous technology and adaptation of imported technology in the field of ocean science and technology.
- Technical advisory services like information, extension, consultancy and testing in the field of ocean science and technology.
- Development of required technologies for the management of coastal zone and islands of the country.
- Operation and maintenance of vessels to provide support to all the activities for achieving the objectives.

Some achievements in the above areas are given below.

Energy & Fresh Water

Energy and Fresh Water programme has been focusing on developing cost effective technologies for producing high quality drinking water and clean energy from ocean. Under this programme extensive research, development, sea testing trials and implementation of wave energy conversion and ocean thermal energy conversion technologies have been carried out. The experience gained led to the technologies like Low Temperature Thermal



Wave energy buoy-BBDB during sea trial



Ocean current turbine



Desalination plant (LTTD) at Kavarrati Island

Desalination (LTTD) and wave energy using fixed and floating devices. LTTD based desalination plant was successfully set up at Kavaratti island in Lakshadweep in 2005 and has been producing fresh water for the local community since then. Also plants at other two islands namely Minicoy and Agatti have been commissioned and are running continuously. The Backward Bent Ducted Buoy (BBDB) developed by the team, with single point

mooring system survived the severe environmental condition during the sea trials. The data covering a wide range of wave climate were collected and good experience in designing of power module was gained. Ocean current turbine development, ocean thermal energy conversion are part of the significant activities.

Offshore Structures

Several offshore components for various programmes like desalination, mining, data buoys and for offshore wind energy are being developed under this programme. The components include anchors, moorings, submarine pipelines and risers for floating platforms and design of fixed structures to cater to the needs of above programmes. These structures / components are being analysed for environmental loads such as tides, waves, currents etc. through laboratory and field studies. The suction pile developed under this programme has been tested successfully in shallow waters off Ratnagiri.

Deep Sea Technology and Ocean Mining

The group has been working on development of systems and devices for ocean mining, since 1994. Mining concept where a crawler based mining machine collects, crushes and pumps nodules to the mother ship using a positive displacement pump through a flexible riser system has been taken up and field demonstration has been carried

out. The crawler has been tested at 500m depth and the insitu soil tester developed by the group has been successfully tested at a depth of 5200 m at the nodule mining site of Central Indian Ocean Basin (CIOB). The artificial nodule laying system has also been tested in the deep sea.



Deep sea mining system

Marine Sensor & Electronics

The focus of Marine Sensor Systems programme is the development of sophisticated underwater sensor technology for marine applications and creating infrastructure for reducing the development time and facilitates rapid prototyping. A facility of excellence to provide electronic support to various activities and projects of NIOT has been established which includes a Helium-Leak detector, Shock and Vibration Test Facility, Corrosion Testing Chamber, Environmental Chamber and EMI/EMC analyzer. A Buried Object Scanning Sonar is being developed by the group. The group has successfully developed a light weight, 2-16kHz acoustic subbottom profiler transmitter operable upto 30bar pressure and tested in the sea.



Desalination plant at Agatti



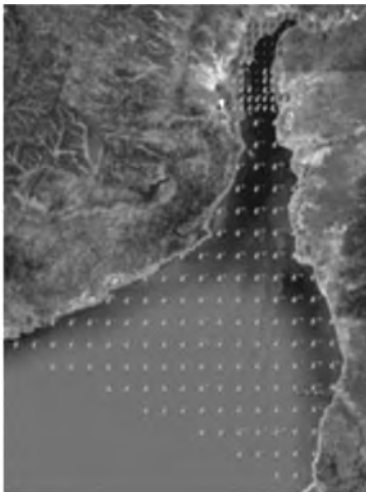
Desalination plant at Minicoy



Coastal and Environmental Engineering

Coastal and Environmental Engineering (CEE) programme focuses on the coastal infrastructure development and engineering applications. The group has carried out numerous industrial projects covering wave tranquility studies, environmental impact assessment

studies, pollution monitoring, waste allocation and multibeam survey. The storm surge model developed by the group was handed over to IMD for their use. Currently the group handles Kalpasar project which involves four major sub-projects having intense field observations, geophysical/geotechnical/bathymetric surveys and numerical modeling which provides cost effective, environment friendly engineering solutions. Geophysical and hydrographic survey has been completed at Kalpasar dam corridor area.



Gulf of Khambhat

Remotely Operable Submersibles and Gas Hydrates

The objective of the Submersibles & Gas Hydrates programme is to develop technological tools for deep ocean mineral exploration such as Poly metallic Manganese Nodules, Gas hydrates and offshore applications such as seabed imaging, pipeline routing, submarine cabling, well head detections. The ROV

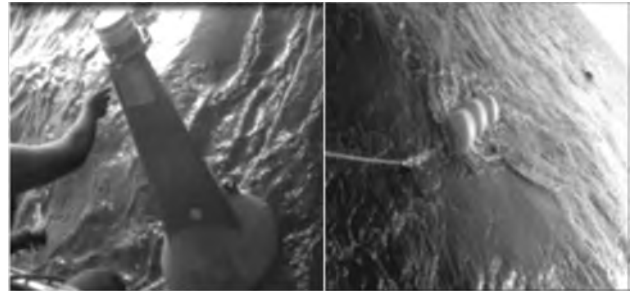


Remotely Operable Vehicle

developed by the team has been successfully tested at 5289m depth. The Autonomous Coring System (ACS) jointly developed with USA has been successfully field tested in shallow waters.

Ocean Acoustics

The Ocean Acoustics programme focuses on research and development in underwater acoustics considering its wide-ranging applications in the oceans. An autonomous noise measurement system developed by the team was successfully deployed along with a moored met-buoy and has been operational in shallow waters off Visakhapatnam during monsoon. Time series observations for 48 days have been made which include extreme events. The group is also carrying out development of vector sensor, advanced signal processing methodologies for underwater acoustic communication, acoustic sea bed characterization etc.



Ambient Noise measurement device

Ocean Electronics

Ocean Electronics has a mandate to develop ocean observation systems and demonstrate for applications in the ocean. The group is involved in the development of Deep Ocean Bottom Pressure Recorder (DOPR) & surface buoy data logger for Tsunami Early Warning Systems, Glider, Autonomous Underwater Profiling Drifter (AUPD), Drifter and technologies for data communication using INSAT satellites. Sea trials of indigenously developed tsunami BPR was conducted at 1900m off Chennai.

Ocean Observation Systems



Met-ocean Data buoy

The Ocean Observation Systems (OOS) programme has the mandate to establish and maintain data Buoy network in Indian seas for measurement of met-ocean parameters to monitor the marine environment. Since 1996 the moored buoy programme has been catering to the *in situ* observation requirements in the ocean and real time data on meteorological/ocean parameters are made and disseminated to INCOIS. 15 deep sea moored buoys which include OMNI buoys with subsurface sensors, have been established in Arabian Sea and Bay of Bengal.

Vessel Management Cell

The main function of Vessel Management Cell (VMC) is the operation, maintenance and management of vessels of the Ministry of Earth Sciences (MoES). Coastal Research Vessel (CRV) Sagar Purvi and Sagar Paschimi, Buoy Tender Vessel (BTV) Sagar Manjusha and Oceanographic



Sagar Nidhi ORV

Research Vessel (ORV) Sagar Nidhi are being operated. Southern Ocean Expedition has been successfully carried out twice by Sagar Nidhi.

Ocean Science and Technology for Islands (OSTI)

Programme is being implemented by the Earth System Sciences Organization - National Institute of Ocean Technology (ESSO-NIOT), a technical arm of the



Tubular Photobioreactor



Open sea cages (North Bay- Port Blair)

Ministry of Earth Sciences, Government of India, for a balanced development of island with special emphasis on building up of infrastructure and expertise in ocean science and technology for the conservation and development of island resources. The aim of the initiative is to develop and transfer technology in the area of marine living resources and to get socio-economic benefits to the coastal fishers, the island community in particular. For the efficient implementation and demonstration of the ocean science and technology related programmes, OSTI has established a state-of-the-art laboratory in head quarter at Chennai and a well equipped field unit Andaman and Nicobar (A & N) Center for Ocean Science and Technology for Islands at Port Blair for carrying out cutting edge research in the field of marine biology, molecular biology and biotechnology.



Ocean Science and Technology for Islands ESSO-National Institute of Ocean Technology

(Ministry of Earth Sciences, Govt. of India)
Pallikarani, Chennai 600 100, India

Beginning with the development and transfer of technology in lobster and crab fattening to the coastal fishers, the OSTI is also involved in developing and deploying Oceanic Fish Aggregating Devices (FADs) in Lakshadweep and the A & N Islands, and emplaced over 750 Artificial reefs along Odisha coast, which greatly benefitted many coastal fishers in augmenting their source of income. The OSTI has transformed to achieve progress in the line of developing advanced technologies in Sea cage farming of marine finfish, Microalgal biotechnology and Microbial Biotechnology. Establishment of Ballast Water Treatment Test Facility, Development of potential drugs from the ocean, Advanced method of biofouling control, regular monitoring of physico-chemical and biological parameters of marine environment around Port Blair and Wandoor Bays are also some of the important programs handled by OSTI. Island resource information system and Environmental Impact Assessment in the Islands are the other services being rendered by the OSTI group for various governmental agencies for their developmental programmes in Andaman & Nicobar group of Islands.

Marine Algal Biotechnology

Isolation and screening of high biomass, lipid, nutraceuticals yielding marine microalgae from Indian waters; design, development and testing of photobioreactors and pond based mass culture systems; optimization of physicochemical variables, mass scale harvesting, dewatering and extraction techniques are the important targets under this activity. So far more than 200 marine microalgal strains isolated from the coastal and oceanic waters of Indian main land, Andaman & Nicobar (A & N) Islands and Lakshadweep were screened for



Continuous Flow Bubble Column Reactor

biomass, lipid and other nutraceuticals production. Three large scale culture systems, such as Continuous Flow Bubble Column Reactor, Tubular Photobioreactor and Solar Powered Paddle Wheel Operated Raceway System were designed, developed, tested and standardised in outdoor using three high lipid yielding marine microalgae (*Chlorella vulgaris*, *C. sorokiniana* and *C. pyrenoidosa*) under autotrophic and mixotrophic culture conditions in custom designed media for production of lipid and nutraceuticals. In addition, an electro flocculation technique has been developed and optimized to harvest biomass and extract lipid and nutraceuticals from marine microalgae.

Marine Microbial Biotechnology

Isolation and culture of deep sea microbes *in situ* conditions for novel bio-molecules production are scientifically challenging issues. To achieve success in this attempt, development of deep sea high pressure sampler, high pressure and low temperature serial dilution system and fermentors are of paramount importance. So far more than 200 novel deepsea microorganisms were isolated from water and sediment samples collected from 1000-2000 m depth of the Arabian Sea, Bay of Bengal and the Andaman Sea. More than 150 deep sea microorganisms are identified by partial sequencing of 16S rRNA gene. Two species of deep sea bacteria and one fungus were successfully cultured under high pressure and low temperature fermentor system up to 200 bar pressure for production of bioactive compounds. An anti-fungal (griseofulvin) and an anticancer (spirobenzofuran derivatives) compounds producing deep sea fungus *Nigrospora sp.* was identified. A low molecular weight (<6KD) broad spectrum anti-microbial peptide producing deep sea bacteria, *Bacillus subtilis* was also characterized from the deepsea environment. Two strains of fungus *Purpureocillium lilacinum* were found to produce an anti-oxidant extracellular polysaccharide and an antifungal (4-methyl-5-thiazoleethanol) and an anticancer (5-pyrazine derivatives) compounds. An extracellular glutaminase-free L-asparaginase producing marine actinobacteria, *Nocardiopsis alba* and lipopeptide surfactant producing sponge associated *Bacillus licheniformis* were isolated from A & N Islands. In



High Pressure serial dilution system and fermentor



Acinetobacter sp. isolated from 2000m depth marine sediment



Sea bass harvested – Kothachathram

addition, a novel consortium of deep sea microbes was developed for biodegradation of complex hydrocarbons.

Open Sea Cage Culture

Large scale fish production through mariculture is the only alternative to cope up with the ever increasing demand for fish proteins. Towards addressing this issue, design and development of sea cages with mooring systems suitable for Indian seas are essential components for the demonstration of open sea cage culture of commercially important marine finfishes. A successful demonstration was made by developing and deploying 9m dia HDPE cages with multipoint mooring in Kothachathram (Andhra Pradesh), Olaikuda (Tamil Nadu) and North Bay (Andaman Islands) representing open sea, semi-protected and fully protected environments, respectively. The concept of nursery rearing of marine finfish fingerlings in sea cages was introduced and demonstrated with seabass seeds of 6 g size with 90 % survival and 24 g weight gain over a period of 45 days. The culture of marine finfishes, such as the Asian seabass (*Lates calcarifer*), cobia (*Rachycentron canadum*), pompano (*Trachinotus blochii*), milkfish (*Chanos chanos*), giant travelly (*Caranx igonobilis*) and blue-barred parrot fish (*Scarus ghobban*) was successfully demonstrated.

Development of potential drugs from the ocean

Under this activity, it is aimed to isolate and identify novel bio-molecules with potential pharmaceutical activity from marine organisms. The project entails collection and identification of marine organisms, extraction and screening of samples for medicinal properties, isolation of active molecules, synthesis and conduct of clinical trials and development of drugs from the pure molecules. So far 759 macro flora (294) and fauna (465) were collected from the sea around the A & N Islands and screened. The testing conducted in the laboratory revealed the presence of a flavanoid glycoside (*Excoecaria agallocha*), hexane-1,2,3,4,5,6-hexol (*Sonneratia alba*) and 3-(4-Hydroxyphenyl)-2-propenoic acid (*Avicennia marina*) compounds with promising bioactivity.

Ballast water treatment and testing

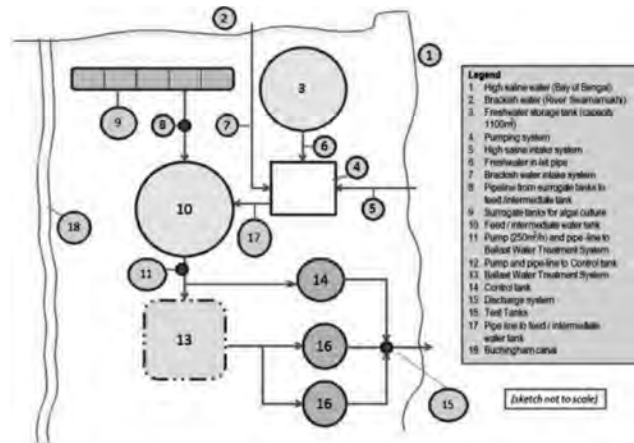
To address the Ballast Water Management problem, OSTI is in the process of establishing a Ballast Water Treatment Technology - Test Facility (BWTT-TF) in accordance with International Maritime Organization (IMO) guidelines. A sophisticated analytical laboratory for the analysis of the Ballast Water treatment parameters has been established at ESSO - NIOT and the exercise for acquiring NABL (National Accreditation Board for



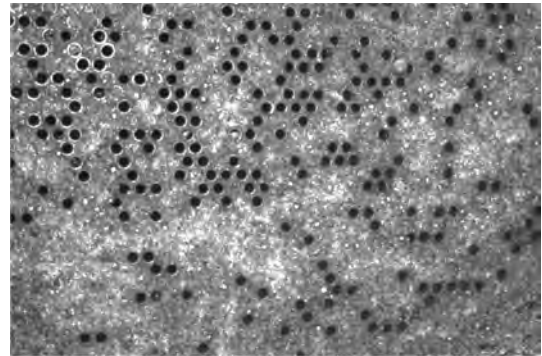
Sample collection by SCUBA diving



Soft coral *Sinularia* sp.



Ballast water treatment testing facility – Schematic view



Biofouling in shell and tube heat exchangers

Testing and Calibration Laboratories) as per ISO/IEC 17025:2005 were completed. The ballast water treatment and test facility is proposed to be developed in the NIOT seafront facility at Vagarru villages in Nellore district of Andhra Pradesh. The site is in close proximity to the river, Swarnamukhi, Bay of Bengal and Buckingham canal in the north, east and west, respectively. The site is selected as specified for the inlet water quality in G8 guidelines of IMO. The facility is expected to be commissioned for testing Ballast Water Treatment Technologies developed by various manufacturers by 2015.

Advanced methods for biofouling control

ESSO - NIOT and the Bhabha Atomic Research Centre, Kalpakkam, are jointly working on Advanced Methods for Biofouling Control with the objectives to develop advanced physical (acoustic and electric pulse based) methods for biofouling control in pipelines and on heat exchanger surfaces. Screening, isolation, purification and characterization of novel environment friendly antifouling compounds from marine organisms (microbes, invertebrates and other eukaryotes), testing of new antifouling techniques for seawater cooling systems using the Biofouling Test Loop Facility and assessment of the

ecotoxicological effects of present and upcoming antifouling techniques using appropriate test organisms in experiments involving laboratory assays and mesocosms are also being undertaken.

Monitoring of pollution around Port Blair and Wandoor Bays

It is a multi-institutional project to continuously monitor the health of sea in around the Port Blair and Wandoor Bays. The major objective of the programme is to conduct periodic coastal cruises and collect scientific data on the physicochemical and biological parameters of sea water and sediment samples from the coastal ocean of the A & N Islands. Continuous observation is being carried out since 2002 through quarterly sampling covering all 8 major prevailing seasons during low and high tides.

Development and deployment of artificial reefs and oceanic fish aggregating devices

The OSTI group developed and deployed artificial reef structures successfully in three places, Penthakata, Chandrabhaga and Balinolcha along the Odisha coast for the Department of Fisheries, Government of Orissa, utilizing the fund received from the United Nations



Congregation of grouper in Artificial Reef



FAD Deployment at off Chidiatappu A&N

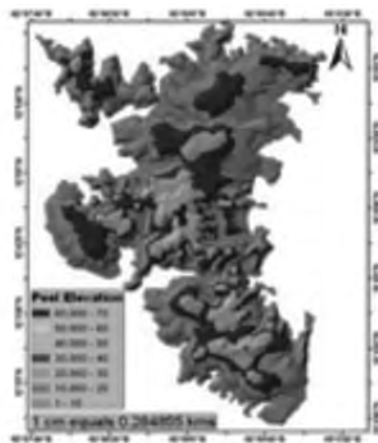
Development Programme. The post deployment survey of artificial reef structures revealed large congregation of grouper and other reef fishes in the vicinity of artificial reef structures. The reef supports the traditional fishers and discourages trawling thereby protecting the turtles and their nesting grounds. The group has also successfully developed and deployed 28 FADs in Lakshadweep and 10 FADs A & N Islands. The FADs act as fishing banks that reduce the travel time, fuel cost and enhance the fish catch.

Island resource information system and marine environmental impact assessment

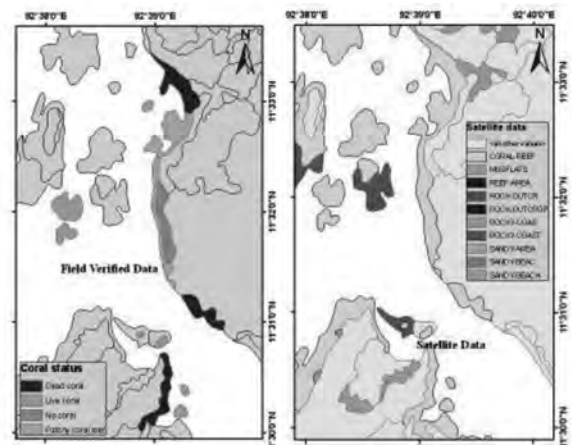
The developmental programmes to be undertaken in the islands necessitate striking a balance between ecology and resource use. The island resource information programme is primarily focused on the development of Geographical Information System (GIS) based island-wise resource inventory to provide a powerful platform to integrate multiple resource information in the form of multi-layered Geo-database. This will help the resource managers and policy makers to evaluate the natural resources in a holistic manner through a user-friendly and interactive interface to take appropriate decisions for various developmental activities in the islands. It can also be used as a powerful tool to synthesize all the data, for comprehensive interpretation and forecasting of marine environmental ecosystems and biodiversity of the islands.

Key accomplishment of OSTI during the past few years

- Isolated more than 200 marine microalgal strains from the coastal and oceanic waters of Indian main land, Andaman and Nicobar Islands and Lakshadweep and screened for them biomass, lipid and nutraceuticals production.
- Designed, developed and tested Continuous Flow Bubble Column Reactor, Tubular Photobioreactor and solar powered paddle wheel operated Raceway system for mass culture of microalgae and standardised outdoor mass culture of three high lipid yielding marine microalgae, *Chlorella vulgaris*, *C. sorokiniana* and *C. pyrenoidosa*.
- Developed and optimized electro flocculation technique for harvesting biomass from large scale marine microalgae culture.
 - Isolated and identified more than 200 novel deep sea microorganisms from water and sediment samples collected from 1000-2000 m depth of the Arabian Sea, Bay of Bengal and the Andamn Sea.
 - Antifungal and anticancer compounds (griseofulvin and spirobenzofuran derivatives) producing deep sea fungus *Nigrospora* sp. and low molecular weight (<6KD) broad spectrum antimicrobial peptide producing deep sea bacteria, *Bacillus subtilis* were successfully cultivated in high pressure and low temperature fermenter system up to 100 bar pressure.
 - The marine fungus *Purpureocillium lilacinum* which produce an anti-oxidant extracellular polysaccharide, an antifungal (4-methyl-5-thiazoleethanol) and an anticancer (5-pyrazine derivatives) compound, was isolated from 1000 m depth.



Peel Island - DEM



Coral coverage - Pongi Balu



ANCOST Laboratory Facility



SCUBA diving training at North Bay

- Isolated a novel extracellular glutaminase-free L-asparaginase producing marine actinobacteria, *Nocardioopsis alba* and a lipopeptide surfactant producing sponge associated *Bacillus licheniformis* from the Andaman Sea. The surfactant production was increased three fold over that of the original strain by recombinant DNA technology.
- Developed novel consortia of deep sea microbes (*Ruegeria* sp., *Oceanobacillus* sp., *Neisotobacter* sp., *Photobacterium* sp., *Pseudoalteromonas* sp., *Ruegeria* sp., *Exiguobacterium* sp. *Enterobacter* sp., *Haererehalobacter* sp., and *Acinetobacter* sp.) for biodegradation of complex hydrocarbons.
- Developed and deployed 9m dia HDPE cages with multipoint mooring in Olaikuda (Tamil Nadu), Kothachathram (Andhra Pradesh) and North Bay (Andaman Islands) and Successfully demonstrated cage culture of marine finfishes such as the Asian Seabass (*Latescalcarifer*), *cobia* (*Rachycentron canadum*), Pompano (*Trachinotus blochii*), Milkfish (*Chanoschanos*), Parrot fish (*Scarusghobban*) and the Giant Travelly (*Caranxigonobilis*).
- The concept of nursery rearing of marine finfish fingerlings in sea cages was introduced and demonstrated with sea bass seeds of 6 g size with up to 90 % survival and 24 g weight gain over a period of 45 days.
- Developed and deployed 750 artificial reef structures in three places namely Penthakata, Chandrabhaga and Balinolcha along Orissa coast for Department of Fisheries, Government of Orissa.
- Developed and deployed 28 FAD in Lakshadweep group of Island and 10 FADs Andaman and Nicobar Islands

Facilities

Sophisticated state-of-art analytical laboratory at NIOT Chennai: Ocean Science and Technology for Island at NIOT Chennai houses various laboratories like, microalgal, micro biology, molecular biology, biochemistry, cell culture, ballast water treatment and testing, seawater chemistry, and isotope handling facility. These laboratories are equipped with state-of-the-art sophisticated equipments, such as HPLC, GC, GC-MS, FTIR, TOC Analyzer, NIR, Fast Column Chromatography, Beta and Gama counters, Fluorescent, UV/Vis Spectrophotometer, ELISA Reader, Gel documentation system, Gradient and Real Time PCR, Cryo microtome, ultra centrifuge, industrial sonicator, Lyophilizer, high pressure fermentor, photobioreactor, water purification systems, Phase contrast, Fluorescent upright and inverted microscopes, Atomic Force Microscope, Scanning Electron Microscope, etc to carry out cutting edge research in the field of marine biology, molecular biology and biotechnology.

Field station cum marine biological laboratory at Port Blair: Andaman and Nicobar Center for Ocean Science and Technology for Island is field cum marine biological laboratory situated in sprawling 20 hectares campus encompassing 16 hectares aquaculture demonstration farm, and 2500 square meters of administrative cum laboratory complex at Minnie Bay, Port Blair. The center is has seawater intake facility, jetty, FRP OBM boats, various types of sampling, SCUBA diving equipment's, and advance analytical equipment's and laboratory for carrying out cutting edge research in marine biology.

Water and Steam Chemistry Division (BARC)

Water and Steam Chemistry Division, a constituent laboratory of the Chemistry Group, Bhabha Atomic Research Centre, Mumbai, was established in 1984 at Kalpakkam to support the large and expanding nuclear power program in the country. This research laboratory has a mandate to support the nuclear power plants by studying the different problems arising out of reaction of high temperature water and cooling water with structural materials in the reactor coolant systems of various types of nuclear power reactors. The R&D activities of this division are directed towards the following major objectives:

- To reduce radioactivity build-up on reactor system surfaces
- To improve integrity of the structural materials of coolant systems
- To understand and mitigate the biofouling problems in cooling water circuits

The division has a mix of researchers from different disciplines such as chemistry, biology and engineering. Currently, programs being pursued in chemistry include:

- Process development for reducing radiation field (chemical decontamination process)
- Development of novel ion exchange resins for selective removal of radioactive cobalt
- Development of coatings with nano-ferrites and ZrO₂
- Chemistry of gadolinium, a neutron poison, under radiation
- Optimization of chemistry of Advanced Heavy Water Reactors (AHWR)

- Flow Accelerated Corrosion of carbon steel
- Electrochemical studies to understand the corrosion behavior of reactor structural materials

The major programs in biology include:

- Development of novel biofouling control methods
- Microbial corrosion and its prevention
- Development of antimicrobial and antibiofilm materials/composites
- Development of biofilm-based bioremediation technologies
- Environmental effects of thermal discharges into the sea

The laboratory is equipped with state of art equipments such as X-Ray Photoelectron spectrometer, Confocal Raman Spectrometer, Inductively Coupled Plasma-Atomic Emission Spectrometer, Atomic Absorption Spectrometer, BET Surface area Analyzer, Mössbauer and UV-Visible Spectrophotometer, Atomic Force Microscope, Gamma Chamber, electrochemical instruments, Confocal Laser Scanning Microscope, Gas Chromatograph, HPLC, Epifluorescence microscope, Musselmonitor etc.

The R&D activities of this division are aimed at improving operational reliability and safety in water-cooled reactors in India with ALARA (as low as reasonably achievable) as the guiding principle. The Division operates several engineering loops to simulate the pressure, temperature and other operating conditions of the primary, secondary and tertiary coolant circuits of nuclear power plants, to carry out simulated experiments and demonstrate the applicability of various control regimes to power reactors.

Biofouling and Biofilm Processes Section

The activities of this section are focused on 1) fundamental studies on biofilm development, 2) understanding and control of biofouling and biocorrosion in power plant cooling water systems, 3) development of novel antimicrobial and antibiofilm methods for industrial and biomedical applications, 4) development of biofilm based bioremediation technologies and 5) understanding and mitigation of environmental effects of thermal discharges into the sea.

I. Bioremediation

The objective of the R&D activities in this programme is to develop technologies that make use of biofilm-based processes for treatment of wastes

Granular biofilm sequencing batch reactors (SBR) for treatment of concentrated nitrate bearing effluents

High strength nitrate wastes are generated during different stages of nuclear fuel cycle. These wastes need to be treated before the effluents can be discharged to the environment.

Biological denitrification is an attractive option for removal of nitrate containing wastes. Highly efficient mixed microbial biomass in the form of granular biofilms (self-immobilized microbial consortia), capable of denitrifying high strength nitrate-bearing synthetic waste, was developed using bench-scale SBRs. Complete and stable denitrification of nitrate (up to 24,000 mg/L NO_3^-) has been achieved in 6-liter volume SBR using acetate as electron donor. During long-term SBR operation, the effluent levels of NO_3^- -N and NO_2^- -N (<10 mg/L) remained well below discharge limits. Results demonstrate that granular biofilm based SBRs can be used for efficient denitrification of high strength nitrate-bearing wastewater.

Self-sustaining granular biomass for bioremediation

Microbial granules are highly promising biomass for bioremediation because of their unique properties such as high biomass retention, resilience to shock loading and tolerance toxic substrates. But maintaining the granules and using them for reductive remediation requires energy input in terms of reduced carbon source, which adds to

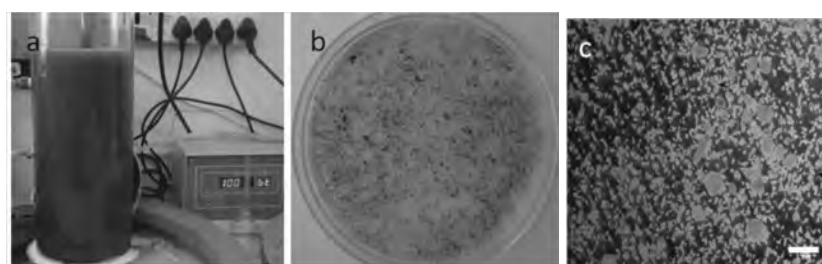


Fig. 1: a) Six litre SBR used for cultivating denitrifying granular biofilms; b & c) morphology of granular biomass. Scale bar = 1 mm.

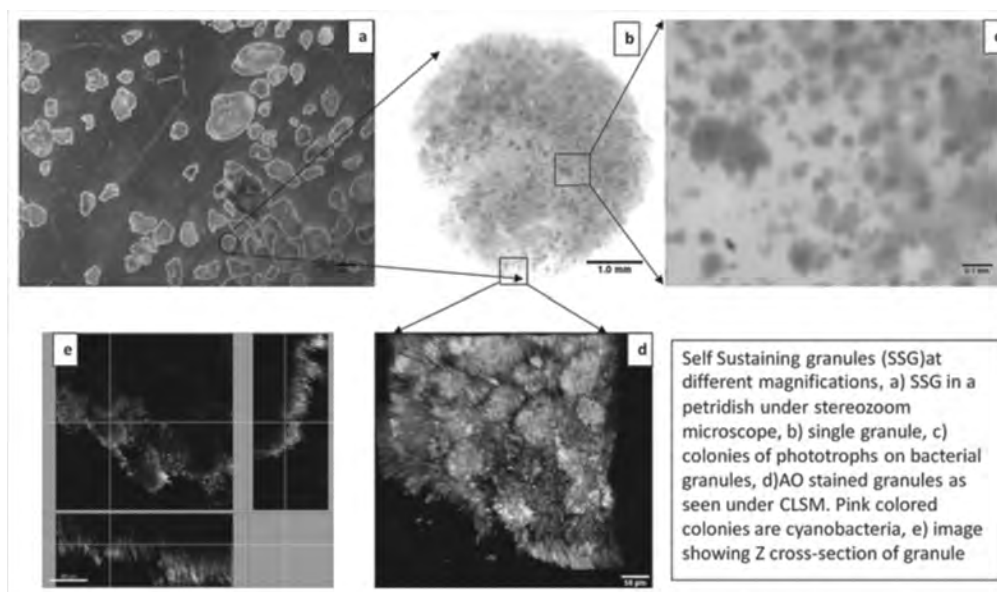


Fig. 2. Phototrophic microbial granules developed in laboratory bioreactors

the cost. We have developed self-sustaining granules (SSG) that can potentially circumvent this issue. The self-sustaining granular biomass involves incorporation of photosynthetic elements such as microalgae and cyanobacteria into granular biomass, such that they can fix their own carbon and thereby provide energy for sustaining the heterotrophic consortium. Furthermore, incorporation of algae and cyanobacteria add to the metabolic diversity of the granular biomass, thereby enhancing the diversity of applications of microbial granules.

Sulphate bioremediation using photosynthetic bacterial consortium

Sulphuric acid is widely used in many metal mining industries. Effluents with low pH and high sulphate (15,000 ppm or more) concentration (known as Acid Mine drainage, AMD) are to be treated before discharge to the environment. Presently, a major part of the AMD is treated chemically using soda lime and selective precipitation of sulphate. A major drawback of the chemical treatment process is generation of sludge, which requires large space for storage. An alternative treatment methodology is being developed using Sulfate Reducing Bacteria (SRB). SRB activity can convert sulphate to sulphide, resulting in its precipitation as metal sulphides. As an innovative modification, we have incorporated green sulphur bacteria (GSB) into the process. GSB is a group of phototropic bacteria which convert sulphide to elemental sulphur using sunlight to fix carbon dioxide (non-oxygenic photosynthesis). In this modified process,

sulphate is reduced to sulphide by SRB and then the contents enter into a second reactor where sulphide is oxidized to elemental sulfur by the GSB in presence of light. The operation is carried out in a column-type photobioreactor. The advantage of this process is complete conversion of sulphate to elemental sulphur. More recently, we have conceptualized a single reactor process, where SRB and GSB will be grown as a consortium. In this process, SRB will convert sulphate to sulphide; during this process carbonate is generated as a byproduct. GSB will utilize sulphide as the electron donor and carbonate will be fixed as organic carbon using light. During this conversion sulphide will be precipitated as elemental sulphur, a commercially valuable product.

II. Novel Antifouling Techniques

The objective of this programme is to develop antifouling technologies with minimal residual toxicity and low environmental impact

Biocatalytic polymer coating for biofilm control

Implant related infections are considered serious complications of surgery and are often very difficult to manage. Medical implants (catheters, stents, intrauterine devices, etc.) placed inside the human body provide ideal surfaces for bacterial colonization and biofilm formation. A biocatalytic polymer based antibacterial coating was developed keeping in mind 1) controlled and sustained delivery of antibiotic and 2) predicted lifetime of the coating. The polymer was impregnated with a polymer degrading enzyme and an antibiotic (Gentamicin, GS). The composite was prepared by partitioning the enzyme and antibiotic between water and organic phase, resulting in a hydrophobic complex, which was soluble in the polymer base. The action of the enzyme leads to controlled degradation of the polymer, resulting in steady and sustained release of the antibiotic. In vitro drug release

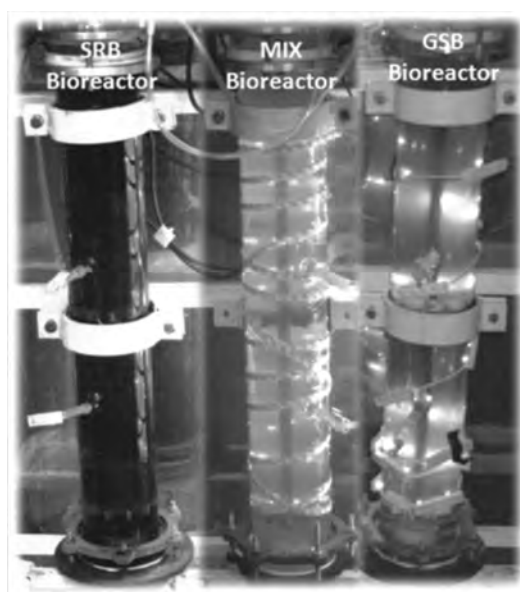


Fig. : Bioreactors showing the growth of SRB (left), mixed growth of SRB plus GSB (middle) and GSB (right). Provision of red light enhances GSB growth.

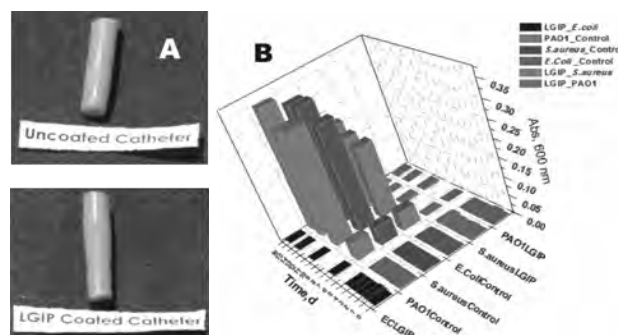


Fig A. Part of a Foley catheter with and without polymer (lipase gentamicin impregnated polymer, LGIP) coating. B. Antibacterial action of LGIP against test isolates.

studies demonstrated sustained release of GS from the polymer coating throughout its lifetime. By modulating the enzyme concentration in the coating, it was possible to vary the lifetime of the coating from 33 h to 16 days. The polymer exhibited antibacterial properties against *E. coli*, *Pseudomonas aeruginosa* and *Staphylococcus aureus*. Foley urinary catheters coated with the polymer exhibited sustained in vitro release of GS. The results suggest that the antibiotic-plus-enzyme-loaded polymer can be used as tunable self-degrading antimicrobial coating on catheters and other implant materials.

III Biofouling and Biocorrosion

The objective of this programme is to understand and solve biofouling and biocorrosion problems faced by the utilities in their cooling water systems

Biofouling in the cooling water systems of seawater-cooled power plants

The status of biofouling in the CWS system power plants is evaluated during maintenance shutdowns. The study attempts to compare fouling loads observed during consecutive surveys to understand the efficacy of treatment strategies. Biofilm (slime) growth on condenser tubes of power plants leads to significant decrease in heat transfer efficiency. Studies are carried out using a dynamic seawater flow-through facility (Biofouling Test Loop Facility) created at Kalpakkam, to develop novel biocide dosing regimens for condenser slime control. Efficacy of continuous and intermittent dosing of advanced biocides such as chlorine dioxide is investigated. It was observed that chlorine dioxide dosing leads to substantially reduced

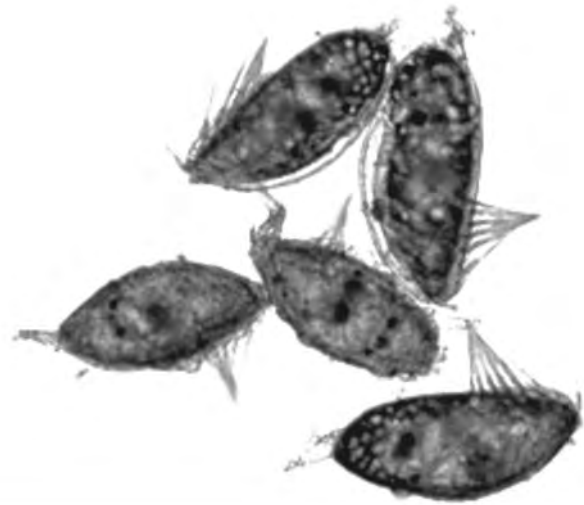


Fig . Cypris larvae of the fouling barnacle *Balanus reticulatus*

formation of trihalomethanes in the condenser effluents reaching the sea, thereby reducing the environmental footprint of the power plants. Larval forms of major fouling organisms such as barnacles are reared in the laboratory and used for studying the effects of varying environmental conditions (biocide levels, substratum characteristics, external electrical stimuli etc.) on settlement and metamorphosis. A Mosselmonitor is used to study the valve movement patterns of the green mussel (*Perna viridis*) in response to chlorination, to devise low level biocide dosing regimes.

Microbial corrosion

Significant corrosion losses in various industries worldwide are attributed to microorganisms. Microbes generally thrive in the conducive environment of cooling water

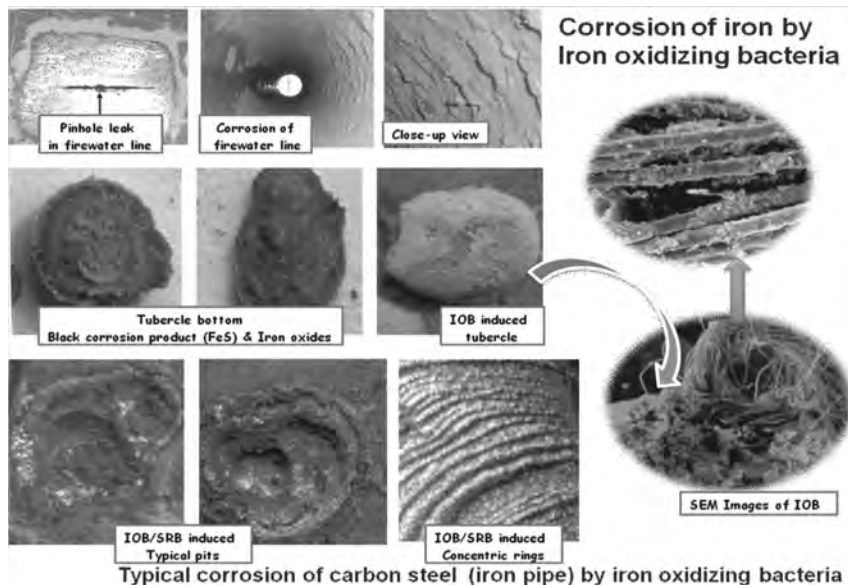


Fig . Microbial corrosion caused by iron oxidizing bacteria in the fire water system of a power plant

systems. The microbes and their metabolic products can deteriorate the materials used in the cooling circuit. Heterogeneous colonization of microorganisms on metal surfaces can generate corrosion potentials almost as large as those generated between incompatible metals. As the corrosion process advances, attached microbiota propagates and infests the entire cooling system. Commonly, five categories of corrosion causing bacteria are recognized viz., iron oxidizing, sulphate reducing, sulphur oxidizing, nitrate reducing and the exopolymer (slime) producing bacteria. Sulphate reducing bacteria are the single most common causative organism of corrosion, constituting 50% of all instances of biocorrosion failures. Current studies aim at characterization of the microbes (attached and planktonic), their metabolites and corrosion product profiles. Based on a thorough understanding of these, control strategies are designed for prevention of microbiologically induced corrosion (MIC) in cooling water systems of power plants.

Microbial diversity in cooling water systems

Combination of classical culture-based and molecular-based techniques is used to study the bacterial diversity in the cooling water systems of power plants, giving special emphasis to sulphate reducing bacteria (SRB). Microbial whole genome extraction of the various water samples and SRB diversity analysis using group-specific primers have been done using nested PCR and DGGE. The nested PCR approach used in this study was found to be suitable for bacterial diversity analysis. In addition, microbiological assay of water samples and carbon steel coupons exposed

online in the service water system of power reactors are routinely carried out. Total aerobic heterotrophic bacteria, iron oxidizing bacteria and sulphate reducing bacteria are analysed before and after biocide treatment for monitoring the efficacy of the treatment programme.

IV. Molecular Level Studies on Biofilms

The objective is to understand the molecular aspects involved in the development of biofilms and to use that knowledge to manage biofilms present in industrial and environmental settings.

Molecular studies of biofilm associated protein (Bap) in *Staph. aureus*

Biofilms are complex matrix-embedded microbial communities growing attached to surfaces or at other interfaces. Generally, the process of biofilm development proceeds through a set of discrete stages. A mature biofilm has a matrix consisting of polysaccharides, proteins and extracellular DNA. Recent studies suggest that a group of surface proteins plays a leading role during the development of the microbial communities. The first member of this group of proteins was described in a *Staphylococcus aureus* and was named Bap, for biofilm-associated protein. Bap is a large, multi-domain, cell surface-anchored protein, playing a crucial role in the early stages of biofilm development.

Work carried out in the last couple of years shows the important role of biofilm-associated protein (Bap) in *S. aureus* biofilm development. Work was started with the

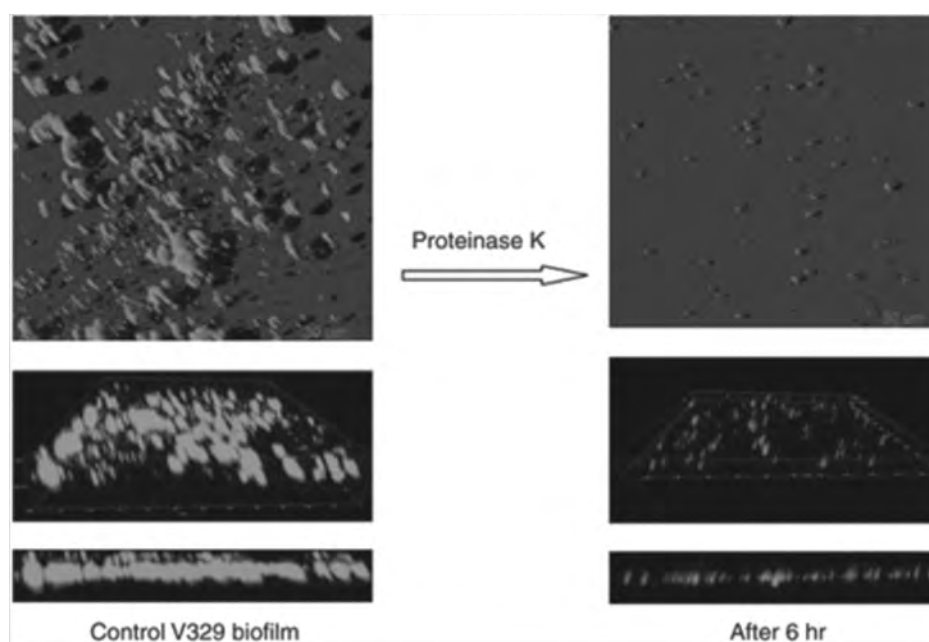


Figure: Confocal study of proteinase K-mediated dispersal of *S. aureus* V329 biofilm

in-silico analysis of protein that indicated the presence EF-hand domain. It was found that Ca^{2+} modulates the *S. aureus* biofilm architecture and topography in a dose-dependent manner. To evaluate the putative Bap-mediated cell to cell interaction, cloning of the full *bap* gene in *E. coli* has been accomplished. Work was started with the *in-silico* analysis of protein that indicated the presence EF-hand domain. It was found that Ca^{2+} modulates the *S. aureus* biofilm architecture and topography in a dose-dependent manner. The dominant role of biofilm-associated protein (Bap) in *S. aureus* biofilm development prompted us to investigate Bap as a potential target for proteinase-mediated biofilm dispersion. Use of proteinase K resulted in the dispersal of *S. aureus* biofilm. This study also established that antibiotics in combination with proteinase K can be used for controlling *S. aureus* biofilms in whose development Bap surface protein has a major role. Bap protein could be a potential target for therapeutic control of *S. aureus* infections.

Earlier studies showed that the presence of *bap* gene and its homologues was restricted to bovine mastitis. Of late, the presence of the *bap* gene has been reported in human nosocomial infections. The biofilm mode life of *S. aureus* enhances its recalcitrance and enables the bacterium to survive antibiotic assault. This also imposes a challenge to host defence mechanisms and antimicrobial therapy. Biofilm dispersal is a natural process that allows bacterial cells to leave biofilm and migrate to a more favourable environment for resettlement. However, during this transition phase, bacteria lose the advantages of the biofilm

mode of life and become relatively more susceptible to antimicrobial agents.

V. Environmental Effects of Condenser Discharges into the Sea

The objective is to understand and mitigate environmental issues emanating from the discharge of heated effluents from power plants into coastal marine environments

Entrainment effects on planktonic organisms

Power plants abstract large amounts of water for condenser cooling. In direct, once-through systems, the water is discharged back into the recipient water body after its use. Phyto- and zooplankton entrained into the cooling water circuits of coastal power plants are subjected to significant changes in temperature, pressure and flow velocity. Because of this, they may suffer damage, including mortality. There is a need to quantify such losses and find ways and means of reducing them. Earlier, the laboratory has played a central role in coordinating a multi-institutional project on thermal ecology studies at power plant effluent sites. More recently, experiments are carried out using a mesocosm facility to study the effects of short-term changes in temperature and presence of antifouling biocides on planktonic organisms. In addition, a new research programme has been initiated to assess the environmental effects of antifouling biocides released through the condenser effluents on marine organisms using biomarker approach.

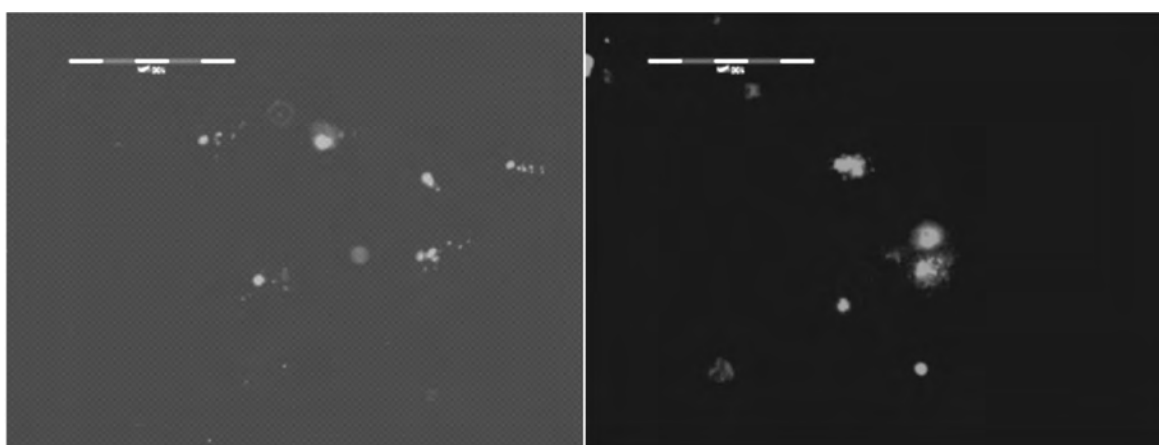


Fig . Results of comet assay to study genotoxicity of antifouling biocides to the marine phytoplankter *Chaetoceros lorenzianus*. Control (left) and treated (right) cells are shown.

Programme

Preface: DAE Solid State Physics Symposium (Diamond Jubilee Year)

Citation: [AIP Conference Proceedings](#) **1731**, 010001 (2016); doi: 10.1063/1.4947603

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View Table of Contents: <http://aip.scitation.org/toc/apc/1731/1>

Published by the [American Institute of Physics](#)

Preface: DAE Solid State Physics Symposium (Diamond Jubilee Year)

It is an immense pleasure to present the proceedings of the Solid State Physics Symposium 2015, the diamond jubilee year event, held at Amity University UP, Noida, Uttar Pradesh during December 21-25, 2015, which is being published online by the American Institute of Physics. The symposium is fully sponsored by the *Board of Research in Nuclear Sciences* (BRNS), Department of Atomic Energy (DAE) and is being organized successfully for several decades and this symposium is the 60th in the series, the diamond jubilee year. This year 763 contributory papers were selected out of 1307 papers that were extensively reviewed by a expert scientists from all over the country. There were 41 thesis and 10 young achiever award presentations and three awards were given in each category.

The venue for 60th DAE-Solid State Physics Symposium 2015 was Amity University UP, Noida. There was an overwhelming response of around 950 registered participants from all over the country. The local hospitality ensured a pleasant stay for all the participants. Scientific sessions were held in time and the plenary talk and invited talks covered diverse topics which are of importance to concurrent scientific, technological, bio-medical, energy, nuclear and advanced material research. There was a plenary talk on first day with titled, “*Condensed Matter Phenomena under High Pressure: Some Insights*”. There were two evening talks on first as well as second day of this memorable event, titled (i) “*Importance of Materials in a Knowledge Economy*” and (ii) *Material Science: a Mythological Perspective*” respectively, to add extra dimensions to the scientific deliberations.

The topics covered in this symposium through 49 invited talks, 24 oral presentations and over 800 poster presentations were (a) Phase Transitions, (b) Soft Condensed Matter including biological systems, (c) Nano-materials, (d) Experimental Techniques & Devices, (e) Glasses & Amorphous Systems, (f) Surfaces, Interfaces & Thin Films, (g) Electronic Structure & Phonons, (h) Single Crystals, (i) Transport Properties, (j) Semiconductor Physics, (k) Superconductivity, Magnetism and Spintronics and (l) Novel Materials. The 11 thematic seminars on potentially of interest to solid state and condensed matter scientific communities which included topics Applied materials, Thin Films/polymers, Ion beam Processing/ Accelerator Based Solid State Physics, Topological Insulator & Nano- Magnetics, Carbon Based materials, Nano& novel materials, Photonics & Meta materials and Physics Under extremes and Theoretical Solid State. Apart from these there were two panel discussions 1) Neutron Science Researches and Synchrotron Science Researches. The symposium as a whole provided a very interactive scientific platform for meeting, discussion and reviewing of the scientific works by students, young and senior research scientists.

On this occasion, we are very grateful to members of the National Advisory Committee and the National Organizing Committee for their continued valued support and guidance in organizing this symposium successfully. We sincerely thank Dr. S.M. Sharma, Director, Physics Group, BARC, for his valuable suggestions and support throughout the symposium. Our hearty thanks to the local convener Dr. Ajay Gupta and his colleagues and students, whose enthusiasm, dedications and commitment ensured successful organization of the symposium at Amity University UP, Noida. We are grateful to Mr. S. Manoj Singh of Scientific Information Resource Division, BARC and Mr. Nayan Khandor and Mr. Aamyant Singh from M/s Fiveonline Solutions Pvt. Ltd. for their support in creating and maintaining the symposium website. Our special thanks are due to the review coordinators and reviewers to spare their valuable time to evaluate the manuscripts. We gratefully acknowledge all the volunteers, who are the unsung heroes, and the participants for their enthusiastic participation and making this symposium a grand success.

R. Chitra, S. Bhattacharya and N.K. Sahoo
(Guest Editors)



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DAE SOLID STATE PHYSICS SYMPOSIUM 2015





















Conference date: 21-25 December 2015
 Location: Uttar Pradesh, India
 ISBN: 978-0-7354-1378-8
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 Volume number: 1731
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PRELIMINARY

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- 2240 (2020) 
- 2239 (2020) 
- 2236 (2020) 
- 2234 (2020) 
- 2238 (2020) 
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Preface: DAE Solid State Physis Symposium (Diamond Jubilee Year)

AIP Conference Proceedings **1731**, 010001 (2016);
<https://doi.org/10.1063/1.4947603>

 No Access . May 2016

Committees: DAE Solid State Physis Symposium (Diamond Jubilee Year)

AIP Conference Proceedings **1731**, 010002 (2016);
<https://doi.org/10.1063/1.4947604>

INVITED TALKS

 No Access . May 2016

Controlled nanopatterning & modifications of materials by energetic ions

O. P. Sinha

AIP Conference Proceedings **1731**, 020001 (2016);
<https://doi.org/10.1063/1.4947605>

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CONTRIBUTED PAPERS A. Phase Transitions

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 No Access . May 2016


High pressure stability analysis and chemical bonding of $Ti_{1-x}Zr_xN$ alloy: A first principle study

Mamta Chauhan and Dinesh C. Gupta

AIP Conference Proceedings **1731**, 030001 (2016);
<https://doi.org/10.1063/1.4947606>

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Atomistic modeling of dropwise condensation

B. S. Sikarwar, P. L. Singh, K. Muralidhar and S. Khandekar

AIP Conference Proceedings **1731**, 030002 (2016);
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Pressure induced phase transition and elastic properties of cerium mononitride (CeN)

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AIP Conference Proceedings **1731**, 030003 (2016);
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2212 (2020) ✓

**Synthesis and
characterization of (1-
x)Bi(Mg_{2/3}Sb_{1/3})O₃-xPbTiO₃
piezoceramics**

2207 (2020) ✓

Ashutosh Upadhyay, Saurabh Dwivedi, Rishikesh
Pandey and Akhilesh Kumar Singh

2210 (2020) ✓

2208 (2020) ✓

AIP Conference Proceedings **1731**, 030004 (2016);
<https://doi.org/10.1063/1.4947609>

2206 (2020) ✓


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2204 (2020) ✓

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2197 (2020) ✓

**Pressure and temperature
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Am and Cf monobismuthides**

2202 (2019) ✓

S. Jain, S. Shriya, R. Khenata, M. Varshney and
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AIP Conference Proceedings **1731**, 030005 (2016);
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Low temperature structural and transport studies of $\text{La}_{0.175}\text{Pr}_{0.45}\text{Ca}_{0.375}\text{MnO}_{3-\delta}$

Shivani Sharma, Aga Shahee, Kiran Singh and N. P. Lalla

AIP Conference Proceedings **1731**, 030006 (2016);
<https://doi.org/10.1063/1.4947611>

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 No Access . May 2016




















Study of polymorphism of ZnPc LB thin film on annealing

Dhrubojyoti Roy, Nayan Mani Das, Mukul Gupta and P. S. Gupta

AIP Conference Proceedings **1731**, 030007 (2016);
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2178 (2019) 2189 (2019) 2181 (2019) 2176 (2019) 2175 (2019) 2167 (2019) 2171 (2019) 2172 (2019) 2173 (2019) 2169 (2019) 2170 (2019) 2168 (2019) 2162 (2019) 2166 (2019) 2165 (2019) 2164 (2019) 2163 (2019) 2161 (2019)  No Access . May 2016

Structural and dielectric studies of Bi (Ni_{0.45}Ti_{0.45}Fe_{0.10})O₃ ceramics

Nitin Kumar, Alok Shukla, R. N. P. Choudhary and C. Behera

AIP Conference Proceedings **1731**, 030008 (2016); <https://doi.org/10.1063/1.4947613>

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 No Access . May 2016

Modelling the role of nucleation on recrystallization kinetics: A cellular automata approach

Harapasanna Tripathy, Arun Kumar Rai, Raj Narayan Hajra, Subramanian Raju and Saroja Saibaba

AIP Conference Proceedings **1731**, 030009 (2016); <https://doi.org/10.1063/1.4947614>

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 No Access . May 2016

Raman, dielectric and AC-conductivity behavior of Dy₂O₃ contained K_{0.5}Na_{0.5}NbO₃ ceramics

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2160 (2019) ✓


AIP Conference Proceedings **1731**, 030010 (2016);
<https://doi.org/10.1063/1.4947615>

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2158 (2019) ✓

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2157 (2019) ✓

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2156 (2019) ✓

Ab-initio approach to IrO₂ polymorphs – properties at high pressures

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Sanjeev K. Gupta and Igor Lukačević

2155 (2019) ✓

AIP Conference Proceedings **1731**, 030011 (2016);
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2154 (2019) ✓

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2150 (2019) ✓

2148 (2019) ✓

 No Access . May 2016

2151 (2019) ✓

Raman spectroscopic investigation of CuGaTe₂ at high pressures

2142 (2019) ✓

Swayam Kesari, Nilesh P. Salke and Rekha Rao

2141 (2019) ✓

AIP Conference Proceedings **1731**, 030012 (2016);
<https://doi.org/10.1063/1.4947617>


2147 (2019) ✓

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Effect of Bi doping on morphotropic phase boundary

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2126 (2019) ✓

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2116 (2019) ✓

and dielectric properties of PZT

Shraddha Joshi and Smita Acharya

AIP Conference Proceedings **1731**, 030013 (2016);
<https://doi.org/10.1063/1.4947618>

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Thermodynamic studies of spin-1/2 Falicov-Kimball model (FKM) on a triangular lattice

Sant Kumar, Umesh K. Yadav, Tulika Maitra and
Ishwar SinghAIP Conference Proceedings **1731**, 030014 (2016);
<https://doi.org/10.1063/1.4947619>

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2128 (2019) ✓

2121 (2019) ✓

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Disordered spin dependent interactions in a spinor ($S=1$) Bose gas: A percolation analysis

Sk. Noor Nabi and Saurabh Basu


AIP Conference Proceedings **1731**, 030015 (2016);
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Thermally stimulated polarization currents of pristine poly (p-hydroxybenzoic acid - co - ethylene terephthalate) polymer liquid crystals

Sridharbabu Yarramaneni, Sharma Anu and J. K. Quamara

AIP Conference Proceedings **1731**, 030016 (2016);
<https://doi.org/10.1063/1.4947621>

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Structural phase transition, electronic structure and optical properties of half Heusler alloys LiBeZ ($Z = \text{As, Sb, Bi}$)

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- 2090 (2019) 
- 2099 (2019) 
- 2096 (2019) 
- 2095 (2019) 
- 2092 (2019) 
- 2091 (2019) 
- 2089 (2019) 

Sb)

A. Amudhavalli and R. Rajeswarapalanichamy

AIP Conference Proceedings **1731**, 030017 (2016);
<https://doi.org/10.1063/1.4947622>

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No Access . May 2016

Prediction of B1 to B10 phase transition in LuN under pressure: An *ab-initio* investigation

B. D. Sahoo, D. Mukherjee, K. D. Joshi, T. C. Kaushik and Satish C. Gupta

AIP Conference Proceedings **1731**, 030018 (2016);
<https://doi.org/10.1063/1.4947623>

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Ferroelectric behaviour of microwave sintered iron deficient $\text{PbFe}_{12}\text{O}_{19-6}$

S. Prathap, K. Chandra Babu Naidu and W. Madhuri

AIP Conference Proceedings **1731**, 030019 (2016);
<https://doi.org/10.1063/1.4947624>

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2086 (2019) ✓

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2077 (2019) ✓

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2070 (2019) ✓


 No Access . May 2016

Ab initio study of phase stability of $\text{NaZr}_2(\text{PO}_4)_3$ under pressure

Ravi Chinnappan, Gurpreet Kaur and B. K. Panigrahi

AIP Conference Proceedings **1731**, 030020 (2016);
<https://doi.org/10.1063/1.4947625>

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Vortex lattice disorder in pseudorandom potential in rotating Bose-Einstein condensate

T. Mithun, K. Porsezian and Bishwajyoti Dey

AIP Conference Proceedings **1731**, 030021 (2016);
<https://doi.org/10.1063/1.4947626>

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 No Access . May 2016

Hysteresis loop analysis to study dynamic phase transition


















Sourav Chattopadhyay and S. B. Santra

AIP Conference Proceedings **1731**, 030022 (2016);
<https://doi.org/10.1063/1.4947627>

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Study of dysprosium in different magnetic states

Archana Lakhani, Arunmay Baidya and Rudra Parasad Jena

AIP Conference Proceedings **1731**, 030023 (2016);
<https://doi.org/10.1063/1.4947628>

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A first principles study of structural, electronic mechanical and magnetic properties of rare earth nitride:TmN

A. Murugan, R. Rajeswarapalanichamy, M. Santhosh and M. Manikandan

AIP Conference Proceedings **1731**, 030024 (2016);
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Synthesis, microstructure and dielectric properties of zirconium doped barium

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titanate

Rohtash Kumar, K. Asokan, S. Patnaik and Balaji
Birajdar

AIP Conference Proceedings **1731**, 030025 (2016);
<https://doi.org/10.1063/1.4947630>

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Study of the structure, dielectric and ferroelectric behavior of $\text{BaBi}_{4+\delta}\text{Ti}_4\text{O}_{15}$ ceramics

Anita Khokhar, Parveen K. Goyal, O. P. Thakur and
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AIP Conference Proceedings **1731**, 030026 (2016);
<https://doi.org/10.1063/1.4947631>

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 No Access . May 2016

Structural transitions in alumina nanoparticles by heat treatment

Nirmal Kaur, Atul Khanna, Banghao Chen and Fernando González

AIP Conference Proceedings **1731**, 030027 (2016);
<https://doi.org/10.1063/1.4947632>

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In situ high pressure investigations on metastable BiBO₃

Atul Khanna, A. K. Mishra and S. M. Sharma

AIP Conference Proceedings **1731**, 030028 (2016);
<https://doi.org/10.1063/1.4947633>

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High pressure structural evolution of SrFe_{0.5}Nb_{0.5}O₃







K. K. Pandey, Nandini Garg, A. K. Mishra, T. P. Sinha and Surinder M. Sharma

AIP Conference Proceedings **1731**, 030029 (2016);
<https://doi.org/10.1063/1.4947634>




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2016 (2018)  No Access . May 20162015 (2018) **Solar thermal charging properties of graphene oxide embedded myristic acid composites phase change material**2014 (2018) 2011 (2018) 2012 (2018) 



Apurv Yadav, Bidyut Barman, Vivek Kumar, Abhishek Kardam, S. Shankara Narayanan, Abhishek Verma, Devinder Madhwal, Prashant Shukla and V. K. Jain

2010 (2018) AIP Conference Proceedings **1731**, 030030 (2016);
<https://doi.org/10.1063/1.4947635>2008 (2018) 2009 (2018) 




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2007 (2018) 2006 (2018)  No Access . May 20162004 (2018) **Low temperature magnetic properties of DyPdBi**2005 (2018) 

A. Mukhopadhyay, S. Chowki and N. Mohapatra

2001 (2018) AIP Conference Proceedings **1731**, 030031 (2016);
<https://doi.org/10.1063/1.4947636>2002 (2018) 

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1999 (2018) 2003 (2018) **CONTRIBUTED PAPERS B. Soft Condensed Matter Including Biological Systems**2000 (2018) 

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1989 (2018) ✓

1990 (2018) ✓


1988 (2018) ✓

1987 (2018) ✓

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1980 (2018) ✓


 No Access . May 2016

Kirkwood correlation factor of neopentanol – carbon tetrachloride solution

Girish Chandra

AIP Conference Proceedings **1731**, 040001 (2016);
<https://doi.org/10.1063/1.4947637>

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Enhancement in biological response of Ag-nano composite polymer membranes using plasma treatment for fabrication of efficient bio materials

Narendra Kumar Agrawal, Tamanna Kumari Sharma, Manish Chauhan, Ravi Agarwal, Y. K. Vijay and K. C. Swami

AIP Conference Proceedings **1731**, 040002 (2016);
<https://doi.org/10.1063/1.4947638>

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 No Access . May 2016

Local structural study of doped-ceria by EXAFS spectroscopy


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- 1981 (2018) 
- 1978 (2018) 
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- 1976 (2018) 
- 1975 (2018) 
- 1971 (2018) 
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- 1973 (2018) 
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- 1965 (2018) 
- 1970 (2018) 
- 1968 (2018) 
- 1967 (2018) 
- 1966 (2018) 
- 1964 (2018) 
- 1961 (2018) 

Sagdeo and S. N. Jha

AIP Conference Proceedings **1731**, 040003 (2016);
<https://doi.org/10.1063/1.4947639>

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 No Access . May 2016

Reduction process of nitroxyl spin probes used in Overhauser-enhanced magnetic resonance imaging: An ESR study

V. Meenakumari, A. Jawahar, S. Premkumar and A. Milton Franklin Benial

AIP Conference Proceedings **1731**, 040004 (2016);
<https://doi.org/10.1063/1.4947640>

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 No Access . May 2016

Molecular docking studies of (X-methylphenyl)-5-nitro-6-amino-3-pyridinecarboxamide (X=2,3,4,5,6) as potential inhibitors for Alzheimer's disease

S. Premkumar, R. Mohamed Asath, T. N. Rekha, A. Jawahar, T. Mathavan and A. Milton Franklin Benial

AIP Conference Proceedings **1731**, 040005 (2016);

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1963 (2018) ✓


<https://doi.org/10.1063/1.4947641>

1958 (2018) ✓

SHOW ABSTRACT

1953 (2018) ✓

1962 (2018) ✓

 No Access . May 2016

1960 (2018) ✓

Investigation of $x\text{Fe}_2\text{O}_4$ ($x = \text{Mn, Co}$) doped hydroxylapatite ferromagnetic biomaterials for the treatment of damaged bone and magnetically targeted drug delivery systems

1959 (2018) ✓

Vikas Anand, K. J. Singh, Kulwinder Kaur and Gaurav Bhatia

1956 (2018) ✓

AIP Conference Proceedings **1731**, 040006 (2016);
<https://doi.org/10.1063/1.4947642>

1947 (2018) ✓

1946 (2018) ✓

1952 (2018) ✓

SHOW ABSTRACT

1949 (2018) ✓

1943 (2018) ✓

1957 (2018) ✓

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- 1931 (2018) ▼
- 1927 (2018) ▼
- 1934 (2018) ▼
- 1930 (2018) ▼
- 1928 (2018) ▼
- 1929 (2018) ▼


 No Access . May 2016

Stochastic analysis of experimentally determined physical parameters of HPMC:NiCl₂ polymer composites

Thejas Urs G., Y. Sangappa and R. Somashekar

AIP Conference Proceedings **1731**, 040007 (2016);
<https://doi.org/10.1063/1.4947643>

SHOW ABSTRACT


 No Access . May 2016

Molecular dynamics simulation of water in and around carbon nanotubes: A coarse-grained description

Sanwardhini Pantawane and Niharendu Choudhury

AIP Conference Proceedings **1731**, 040008 (2016);
<https://doi.org/10.1063/1.4947644>

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 No Access . May 2016

Free energy computations employing Jarzynski identity and Wang – Landau algorithm

M. Suman Kalyan, K. P. N. Murthy and V. S. S.

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1924 (2018) ✓


AIP Conference Proceedings **1731**, 040009 (2016);
<https://doi.org/10.1063/1.4947645>

1926 (2018) ✓

1920 (2018) ✓

SHOW ABSTRACT

1925 (2018) ✓

 No Access . May 2016

1923 (2018) ✓

Controlling block copolymer phase behavior using ionic surfactant

1922 (2018) ✓

D. Ray and V. K. Aswal

1921 (2018) ✓

AIP Conference Proceedings **1731**, 040010 (2016);
<https://doi.org/10.1063/1.4947646>


1918 (2017) ✓

1919 (2017) ✓

SHOW ABSTRACT

1917 (2017) ✓

1914 (2017) ✓

 No Access . May 2016

1915 (2017) ✓

Aggregation in charged nanoparticles solutions induced by different interactions

1916 (2017) ✓

S. Abbas, Sugam Kumar, V. K. Aswal and J. Kohlbrecher

1912 (2017) ✓

AIP Conference Proceedings **1731**, 040011 (2016);
<https://doi.org/10.1063/1.4947647>


1910 (2017) ✓

1913 (2017) ✓

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1911 (2017) ✓

1901 (2017) ✓

 No Access . May 2016

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- 1897 (2017) 
- 1896 (2017) 
- 1894 (2017) 
- 1892 (2017) 
- 1895 (2017) 
- 1890 (2017) 

Maxwell Wagner and Goldstone mode relaxations in a oligomethylene spacer based ferroelectric liquid crystal

D. Goswami, P. K. Mandal, A. Debnath and R. Dabrowski

AIP Conference Proceedings **1731**, 040012 (2016);
<https://doi.org/10.1063/1.4947648>

SHOW ABSTRACT


 No Access . May 2016

Observation of dynamic equilibrium cluster phase in nanoparticle-polymer system

Sugam Kumar, S. Mehan, V. K. Aswal and R. Schwein

AIP Conference Proceedings **1731**, 040013 (2016);
<https://doi.org/10.1063/1.4947649>



SHOW ABSTRACT

 No Access . May 2016




Permeability studies of redox-sensitive nitroxyl spin probes in corn oil using an L-band ESR spectrometer

D. David Jebaraj, Hideo Utsumi, R. Mohamed Asath and A. Milton Franklin Benial

Loading [MathJax]/jax/output/HTML-CSS/jax.js Conference Proceedings **1731**, 040014 (2016);







1891 (2017) <https://doi.org/10.1063/1.4947650>1887 (2017) 

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1882 (2017) 1886 (2017)  No Access . May 2016

Investigation on a laterally fluorinated orthoconic antiferroelectric liquid crystal by different experimental techniques

Kartick Ch. Dey, Pradip Kr. Mandal and Roman Dabrowski







AIP Conference Proceedings **1731**, 040015 (2016);
<https://doi.org/10.1063/1.4947651>1885 (2017) 1889 (2017) 1888 (2017) 1878 (2017) 1883 (2017) 1874 (2017) 

SHOW ABSTRACT

1884 (2017) 1880 (2017)  No Access . May 2016

Synchrotron micro-imaging of soybean (*Glycine max*) leaves grown from magnetoprimered seeds - Feasibility study

A. Fatima, K. N. Guruprasad, S. Kataria, A. K. Agrawal, B. Singh, P. S. Sarkar, T. Shripathi, Y. Kashyap and A. Sinha

AIP Conference Proceedings **1731**, 040016 (2016);
<https://doi.org/10.1063/1.4947652>1877 (2017) 1881 (2017) 1872 (2017) 1879 (2017) 1876 (2017) 1871 (2017) 

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1869 (2017) ✓

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1861 (2017) ✓

1862 (2017) ✓

1858 (2017) ✓

1852 (2017) ✓

1850 (2017) ✓


 No Access . May 2016

Dynamics of CTAB in hybrid CTAB-hydroxyapatite system

P. Dubey, V. K. Sharma, S. Mitra, G. Verma, P. A. Hassan, M. Johnson and R. Mukhopadhyay

AIP Conference Proceedings **1731**, 040017 (2016);
<https://doi.org/10.1063/1.4947653>

SHOW ABSTRACT

 No Access . May 2016


A temperature dependent infrared absorption study of strong hydrogen bonds in bis(glycinium)oxalate

Himal Bhatt, M. N. Deo, C. Murli, S. R. Vishwakarma, R. Chitra and Surinder M. Sharma

AIP Conference Proceedings **1731**, 040018 (2016);
<https://doi.org/10.1063/1.4947654>

SHOW ABSTRACT

CONTRIBUTED PAPERS C. Nano-Materials

 No Access . May 2016

Optimized surface topography of thermoplastics blends modified by graphene

Loading [MathJax]/jax/output/HTML-CSS/jax.js

- 1854 (2017) ✓
- 1851 (2017) ✓
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- 1843 (2017) ✓

Girish M. Joshi, Ajay Sharma, Mayank Pandey,
Moumita Khutia, N. Madhusudhana Rao, S.
Kaleemulla, Ramesh Kumar C., R. R. Deshmukh
and M. Teresa Cuberes

AIP Conference Proceedings **1731**, 050001 (2016);
<https://doi.org/10.1063/1.4947655>

SHOW ABSTRACT

 No Access . May 2016

Synthesis of ZnSnO₃ nanostructure by sol gel method

Touseef Ahmad Para, Hilal Ahmad Reshi and Vilas
Shelke

AIP Conference Proceedings **1731**, 050002 (2016);
<https://doi.org/10.1063/1.4947656>

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 No Access . May 2016

Fabrication of nano piezoelectric based vibration accelerometer for mechanical sensing

S. Murugan, M. V. N. Prasad and K. Jayakumar

AIP Conference Proceedings **1731**, 050003 (2016);
<https://doi.org/10.1063/1.4947657>

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1838 (2017) ✓

1837 (2017) ✓

1834 (2017) ✓

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 No Access . May 2016

Effect of microwave-assisted sintering on dielectric properties of $\text{CaCu}_3\text{Ti}_4\text{O}_{12}$ ceramic

Suman Rani, Neetu Ahlawat, R. Punia, R. S. Kundu and N. Ahlawat

AIP Conference Proceedings **1731**, 050004 (2016);
<https://doi.org/10.1063/1.4947658>

SHOW ABSTRACT


 No Access . May 2016

ZnO:Gd nanocrystals for fluorescent applications

N. K. Divya and P. P. Pradyumnan

AIP Conference Proceedings **1731**, 050005 (2016);
<https://doi.org/10.1063/1.4947659>

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 No Access . May 2016

Gallium arsenide/gold nanostructures deposited using plasma method



















O. Mangla, S. Roy and S. Annapoorni

AIP Conference Proceedings **1731**, 050006 (2016);
<https://doi.org/10.1063/1.4947660>

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1812 (2017) 

SHOW ABSTRACT


1822 (2017) 1819 (2017) 1816 (2017) 1811 (2017) 1809 (2017) 1814 (2017) 1810 (2017) 1817 (2017) 1815 (2017) 1806 (2017) 1813 (2017) 1804 (2017) 1798 (2017) 1807 (2017) 1805 (2017) 1793 (2017) 1803 (2017)  No Access . May 2016

Gallium nitride nanoneedles grown in extremely non-equilibrium nitrogen plasma

O. Mangla and S. Roy

AIP Conference Proceedings **1731**, 050007 (2016);
<https://doi.org/10.1063/1.4947661>

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 No Access . May 2016

Investigations on structural, vibrational and dielectric properties of nanosized Cu doped Mg-Zn ferrites

Anand Yadav, Rambabu Rajpoot, M. A. Dar and Dinesh Varshney

AIP Conference Proceedings **1731**, 050008 (2016);
<https://doi.org/10.1063/1.4947662>

SHOW ABSTRACT

 No Access . May 2016

Structural and spectroscopic study of mechanically synthesized SnO₂ nanostructures


Loading [MathJax]/jax/output/HTML-CSS/jax.js

- 1801 (2017) 
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- 1790 (2016) 
- 1785 (2016) 
- 1784 (2016) 
- 1786 (2016) 
- 1783 (2016) 
- 1787 (2016) 

Ankush Vij and Ravi Kumar

AIP Conference Proceedings **1731**, 050009 (2016);
<https://doi.org/10.1063/1.4947663>

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 No Access . May 2016

Analysis of surface potential and magnetic properties of Fe₃O₄/graphene oxide nanocomposites

Amodini Mishra and Tanuja Mohanty

AIP Conference Proceedings **1731**, 050010 (2016);
<https://doi.org/10.1063/1.4947664>

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 No Access . May 2016

One-step facile synthesis of noble metal nanocrystals with tunable morphology in a nematic liquid crystalline medium

Kaustabh Dan, Biswarup Satpati and Alokmay Datta

AIP Conference Proceedings **1731**, 050011 (2016);
<https://doi.org/10.1063/1.4947665>

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1779 (2016) ✓

1777 (2016) ✓

1781 (2016) ✓

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1770 (2016) ✓

1771 (2016) ✓

1768 (2016) ✓

1767 (2016) ✓

1766 (2016) ✓

1764 (2016) ✓



No Access . May 2016

Electronic properties of phosphorene/graphene heterostructures: Effect of external electric field

Sumandeep Kaur, Ashok Kumar, Sunita Srivastava and K. Tankeshwar

AIP Conference Proceedings **1731**, 050012 (2016);
<https://doi.org/10.1063/1.4947666>

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No Access . May 2016

Photoluminescence and energy transfer process in $\text{Gd}_2\text{O}_3:\text{Eu}^{3+}, \text{Tb}^{3+}$

T. Selvalakshmi and A. Chandra Bose

AIP Conference Proceedings **1731**, 050013 (2016);
<https://doi.org/10.1063/1.4947667>

SHOW ABSTRACT





No Access . May 2016

Silicon nanostructures-induced photoelectrochemical solar water splitting for energy applications




U. Dadwal, Neha Ranjan and R. Singh

AIP Conference Proceedings **1731**, 050014 (2016);






Loading [MathJax]/jax/output/HTML-CSS/jax.js

1763 (2016) <https://doi.org/10.1063/1.4947668>1765 (2016) 




SHOW ABSTRACT

1761 (2016) 1762 (2016)  No Access . May 2016







Giant dielectric permittivity and weak ferromagnetic behavior in $\text{Bi}_{0.5}\text{La}_{0.5}\text{Fe}_{0.5}\text{Cr}_{0.5}\text{O}_3$ ceramic

1759 (2016) 1760 (2016) Patri Tirupathi, K. Raju, Naresh Peetla,
Ramakrishna Pantangi and Mukul Pastor1741 (2016) AIP Conference Proceedings **1731**, 050015 (2016);
<https://doi.org/10.1063/1.4947669>1757 (2016) 1758 (2016) 


SHOW ABSTRACT

1755 (2016) 1756 (2016)  No Access . May 2016

Microstructural, optical and electrical properties of $\text{LaFe}_{0.5}\text{Cr}_{0.5}\text{O}_3$ perovskite nanostructures


















1754 (2016) 1753 (2016) S. Asad Ali, Swaleha Naseem, Wasi Khan, A.
Sharma and A. H. Naqvi1752 (2016) AIP Conference Proceedings **1731**, 050016 (2016);
<https://doi.org/10.1063/1.4947670>1733 (2016) 1745 (2016) 1740 (2016) 

SHOW ABSTRACT

1749 (2016) 

Loading [MathJax]/jax/output/HTML-CSS/jax.js

 No Access . May 2016


1751 (2016) 1750 (2016) 1743 (2016) 1748 (2016) 1747 (2016) 1746 (2016) 1744 (2016) 1742 (2016) 1738 (2016) 1737 (2016) 1739 (2016) 1734 (2016) 1735 (2016) 1731 (2016) [Issue 1, May 23](#)1736 (2016) 1732 (2016) 1730 (2016) 

Multiferroism in hydrothermally prepared Ce:BaTiO₃ nanoparticles

P. Senthilkumar, S. Dhanuskodi, M. Muneeswaran and N. V. Giridharan

AIP Conference Proceedings **1731**, 050017 (2016); <https://doi.org/10.1063/1.4947671>

SHOW ABSTRACT


 No Access . May 2016

Amide functionalized MWNT/SPEEK composite membrane for better electrochemical performance

Swati Gahlot, Prem P. Sharma and Vaibhav Kulshrestha

AIP Conference Proceedings **1731**, 050018 (2016); <https://doi.org/10.1063/1.4947672>

SHOW ABSTRACT

 No Access . May 2016

Effect of low energy ion irradiation on the transport and structural behavior of PEDOT:PSS systems

S. Shilpa, K. N. Venkatachalaiah, R. Damle, Pravin Kumar, D. Kanjilal and G. N. Kumaraswamy

AIP Conference Proceedings **1731**, 050019 (2016);

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1728 (2016) ✓


<https://doi.org/10.1063/1.4947673>

1727 (2016) ✓

SHOW ABSTRACT

1729 (2016) ✓

1725 (2016) ✓

 No Access . May 2016

Effect of cobalt doping on structural, optical and dielectric properties of TiO₂

1726 (2016) ✓

C. Stella, Diva Prabhakar, N. Soundararajan and K. Ramachandran

1724 (2016) ✓

AIP Conference Proceedings **1731**, 050020 (2016);
<https://doi.org/10.1063/1.4947674>

1723 (2016) ✓


1717 (2016) ✓

1722 (2016) ✓

SHOW ABSTRACT

1721 (2016) ✓

1720 (2016) ✓

 No Access . May 2016

Structural and optical properties of microwave assisted CdO-NiO nanocomposite

1718 (2016) ✓

K. Karthik and S. Dhanuskodi

1719 (2016) ✓

AIP Conference Proceedings **1731**, 050021 (2016);
<https://doi.org/10.1063/1.4947675>

1715 (2016) ✓

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1716 (2016) ✓

SHOW ABSTRACT

1712 (2016) ✓

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 No Access . May 2016

Variation in the electrical

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- 1698 (2016) 
- 1703 (2015) 
- 1702 (2015) 
- 1697 (2015) 
- 1699 (2015) 
- 1700 (2015) 
- 1692 (2015) 
- 1695 (2015) 

properties of ion beam irradiated cadmium selenate nanowires

R. P. Chauhan, Chetna Narula and Suresh Panchal

AIP Conference Proceedings **1731**, 050022 (2016);
<https://doi.org/10.1063/1.4947676>

SHOW ABSTRACT


 No Access . May 2016

Effect of morphology on the non-ohmic conduction in ZnO nanostructures

E. Praveen and K. Jayakumar

AIP Conference Proceedings **1731**, 050023 (2016);
<https://doi.org/10.1063/1.4947677>

SHOW ABSTRACT



 No Access . May 2016

Synthesis of silver nano-materials from *Grevillea robusta* A Cunn (*Silver-oak tree*) leaves extract and shape directing role of cetyltrimethylammonium bromide




Rabia Ahmad, Qamer Faisal and Sajjad Hussain

AIP Conference Proceedings **1731**, 050024 (2016);

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1693 (2015) <https://doi.org/10.1063/1.4947678>1691 (2015) 






SHOW ABSTRACT

1689 (2015) 1694 (2015)  No Access . May 2016





Synthesis of GaN:ZnO solid solution by solution combustion method and characterization for photocatalytic application

Sumithra Sivadas Menon, R. Anitha, Bhavana Gupta, K. Baskar and Shubra Singh

AIP Conference Proceedings **1731**, 050025 (2016);
<https://doi.org/10.1063/1.4947679>

1687 (2015) 1690 (2015) 1688 (2015) 1686 (2015) 1685 (2015) 




SHOW ABSTRACT

1684 (2015) 1683 (2015) 1682 (2015)  No Access . May 2016




Electronic energy loss spectra from mono-layer to few layers of phosphorene

Brij Mohan, Rajesh Thakur and P. K. Ahluwalia

AIP Conference Proceedings **1731**, 050026 (2016);
<https://doi.org/10.1063/1.4947680>

1681 (2015) 1680 (2015) 1677 (2015) 

SHOW ABSTRACT

1679 (2015) 1678 (2015) 1676 (2015)  No Access . May 2016

Loading [MathJax]/jax/output/HTML-CSS/jax.js

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1662 (2015) ✓

1658 (2015) ✓

An efficient synthesis of nanocrystalline BaFe₁₂O₁₉ materials by modified co-precipitation method

M. Habeeba, S. Balamurugan and S. P. Resmi

AIP Conference Proceedings **1731**, 050027 (2016);
<https://doi.org/10.1063/1.4947681>

SHOW ABSTRACT



No Access . May 2016

Temperature dependent growth of GaN nanowires using CVD technique


Mukesh Kumar, Vikram Kumar and R. Singh

AIP Conference Proceedings **1731**, 050028 (2016);
<https://doi.org/10.1063/1.4947682>

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

- 1657 (2015) ∨
- 1656 (2015) ∨
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- 1643 (2015) ∨
- 1642 (2015) ∨
- 1641 (2015) ∨
- 1640 (2015) ∨


 No Access . May 2016

Understanding of ZnO morphologies in the presence of surfactants

Baljinder Singh, Aman Kaura, Gurinder Singh, G. S. S. Saini and S. K. Tripathi

AIP Conference Proceedings **1731**, 050029 (2016);
<https://doi.org/10.1063/1.4947683>

SHOW ABSTRACT

 No Access . May 2016

Mechano-thermal synthesis of nanocrystalline $\text{RuSr}_2\text{Eu}_{1.5}\text{Ce}_{0.5}\text{Cu}_2\text{O}_{10-\delta}$ materials: Micro-structural, optical and magnetic properties

S. Balamurugan, A. K. Jakkir Hussain, P. Parthiban, A. T. Satya and J. Janaki

AIP Conference Proceedings **1731**, 050030 (2016);
<https://doi.org/10.1063/1.4947684>

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1639 (2014) ✓

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 No Access . May 2016

Structural and impedance studies of $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$ synthesized by sol-gel method

Laurel Simon Lobo, A. Rubankumar and S. Kalainathan

AIP Conference Proceedings **1731**, 050031 (2016);
<https://doi.org/10.1063/1.4947685>

SHOW ABSTRACT


 No Access . May 2016

Microwave irradiation induced band gap tuning of $\text{MoS}_2\text{-TiO}_2$ nanocomposites

Jyoti Shakya and T. Mohanty

AIP Conference Proceedings **1731**, 050032 (2016);
<https://doi.org/10.1063/1.4947686>

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 No Access . May 2016

NH_3 sensing properties polyaniline: TiO_2 nanorods heterostructure

U. V. Patil, Niranjana S. Ramgir, A. K. Debnath, N. Karmakar, D. K. Aswal, D. C. Kothari and S. K. Gupta

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1624 (2014) ✓


<https://doi.org/10.1063/1.4947687>

1620 (2014) ✓

SHOW ABSTRACT

1619 (2014) ✓

1618 (2014) ✓

 No Access . May 2016

Judd Ofelt analysis and energy transfer mechanism in Pr³⁺ doped Mg₂SiO₄ nanophosphors

Ramachandra Naik, S. C. Prashantha, H. Nagabhushana, S. C. Sharma, D. M. Jnaneshwara, K. S. Ananthraju, H. P. Nagaswarupa, H. B. Premkumar and M. Chandrasekhar

AIP Conference Proceedings **1731**, 050034 (2016);
<https://doi.org/10.1063/1.4947688>

1616 (2014) ✓

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SHOW ABSTRACT


1613 (2014) ✓

1614 (2014) ✓

1612 (2014) ✓

1611 (2014) ✓

1610 (2014) ✓

 No Access . May 2016

Dopant concentration dependent growth of Fe:ZnO nanostructures

Anshuman Sahai and Navendu Goswami

AIP Conference Proceedings **1731**, 050035 (2016);
<https://doi.org/10.1063/1.4947689>

1609 (2014) ✓

1608 (2014) ✓

SHOW ABSTRACT

1606 (2014) ✓

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1586 (2014) ✓


1587 (2014) ✓

Synthesis and magnetic properties of nickel nanoparticles

Jaiveer Singh, Tarachand Patel, Netram Kaurav and Gunadhori S. Okram

AIP Conference Proceedings **1731**, 050036 (2016);
<https://doi.org/10.1063/1.4947690>

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 No Access . May 2016

Highly conducting and preferred <220> oriented boron doped nc-Si films for window layers in nc-Si solar cells

Praloy Mondal and Debajyoti Das

AIP Conference Proceedings **1731**, 050037 (2016);
<https://doi.org/10.1063/1.4947691>

SHOW ABSTRACT

 No Access . May 2016

Structural evolution of tetragonal MnO₂ and its electrochemical behavior

P. Muhammed Shafi and A. Chandra Bose

AIP Conference Proceedings **1731**, 050038 (2016);
<https://doi.org/10.1063/1.4947692>

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1583 (2014) ✓

SHOW ABSTRACT

1585 (2014) ✓

1581 (2014) ✓

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 No Access . May 2016

Structural and magnetic properties of Mg substituted Co nanoferrites

Jyoti Sharma, Neha Sharma, Premlata Yadav, Jyoti Parashar, Priya Jadoun, V. K. Saxena, D. Bhatnagar and K. B. Sharma

AIP Conference Proceedings **1731**, 050039 (2016);
<https://doi.org/10.1063/1.4947693>

SHOW ABSTRACT

 No Access . May 2016

Influence of rare earth ions on microstructural and optical properties of ZnO nanostructures

Sk. Riyajuddin, Swaleha Naseem, Wasi Khan, Shabbir Ahmad, M. Faizan and A. H. Naqvi

AIP Conference Proceedings **1731**, 050040 (2016);
<https://doi.org/10.1063/1.4947694>

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1566 (2013) ✓

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No Access . May 2016

Growth of α - V_2O_5 nanostructured thin films as a function of deposition process

Megha Singh, Rabindar K. Sharma and G. B. Reddy

AIP Conference Proceedings **1731**, 050041 (2016);
<https://doi.org/10.1063/1.4947695>

SHOW ABSTRACT



No Access . May 2016

Size and shape dependent melting temperature and thermal expansivity of metallic and semiconductor nanoparticles

Ghanshyam R. Patel, Nilesh A. Thakar and Tushar C. Pandya

AIP Conference Proceedings **1731**, 050042 (2016);
<https://doi.org/10.1063/1.4947696>

SHOW ABSTRACT




No Access . May 2016


$Zn_{1-x}Co_xO$ nanoparticles: Synthesis and study of enhanced optical and structural properties

Abdul Ahad, Suhail Majid and F. Rahman



Loading [MathJax]/jax/output/HTML-CSS/jax.js


1549 (2013) 


AIP Conference Proceedings **1731**, 050043 (2016);
<https://doi.org/10.1063/1.4947697>

1546 (2013) 

SHOW ABSTRACT


1548 (2013) 1547 (2013) 

 No Access . May 2016


1530 (2013) 

Gas sensing behaviour of Cr_2O_3 and W^{6+} : Cr_2O_3 nanoparticles towards acetone





Nipin Kohli, Anita Hastir and Ravi Chand Singh


1545 (2013) 


AIP Conference Proceedings **1731**, 050044 (2016);
<https://doi.org/10.1063/1.4947698>

1544 (2013) 

SHOW ABSTRACT


1543 (2013) 1542 (2013) 1539 (2013) 1540 (2013) 

 No Access . May 2016


1538 (2013) 

Texture coefficient analysis of ion beam irradiated copper nanowires





Pallavi Rana, Ritika Chaudhary and R. P. Chauhan


1541 (2013) 

AIP Conference Proceedings **1731**, 050045 (2016);
<https://doi.org/10.1063/1.4947699>

1536 (2013) 

SHOW ABSTRACT

1537 (2013) 1527 (2013) 1535 (2013) 1534 (2013) 

 No Access . May 2016

Facile synthesis of

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- 1515 (2013) 
- 1516 (2013) 

nanocrystalline CuFe_2O_4 materials by molten salt flux method

S. Selvamani, S. Balamurugan and S. V. Sreenija

AIP Conference Proceedings **1731**, 050046 (2016);
<https://doi.org/10.1063/1.4947700>

SHOW ABSTRACT


 No Access . May 2016

Effect of Sc^{3+} on structural and magnetic properties of Mn-Zn nano ferrites

Jagadeesha Angadi V., Shidaling Matteppanavar, Srinatha N., E. Melagiriappa and B. Rudraswamy

AIP Conference Proceedings **1731**, 050047 (2016);
<https://doi.org/10.1063/1.4947701>

SHOW ABSTRACT

 No Access . May 2016

SnO_2 nanoparticles for supercapacitor application

K. Manikandan, S. Dhanuskodi, N. Maheswari and G. Muralidharan

AIP Conference Proceedings **1731**, 050048 (2016);
<https://doi.org/10.1063/1.4947702>

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1512 (2013) ✓

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 No Access . May 2016

Effect of reaction atmosphere on structural and optical properties of hexagonal molybdenum oxide (h-MoO₃)

V. Arumai Doss, A. Chithambararaj and A. Chandra Bose

AIP Conference Proceedings **1731**, 050049 (2016);
<https://doi.org/10.1063/1.4947703>

SHOW ABSTRACT


 No Access . May 2016

Dye-sensitization of CdS nano-cage - A density functional theory approach

Kalpna Jain, Shyam Kishor, Kh. S. Singh, Ida Josefsson, Michael Odelius and Lavanya M. Ramaniah

AIP Conference Proceedings **1731**, 050050 (2016);
<https://doi.org/10.1063/1.4947704>

SHOW ABSTRACT

 No Access . May 2016

Modified structural and frequency dependent impedance formalism of nanoscale BaTiO₃ due to Tb inclusion


Loading [MathJax]/jax/output/HTML-CSS/jax.js

- 1493 (2012) 
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- 1487 (2012) 
- 1483 (2012) 
- 1441 (2012) 
- 1486 (2012) 
- 1485 (2012) 
- 1482 (2012) 

Manjit Borah and Dambarudhar Mohanta

AIP Conference Proceedings **1731**, 050051 (2016);
<https://doi.org/10.1063/1.4947705>

SHOW ABSTRACT


 No Access . May 2016

ZnO nanoparticles based fiber optic gas sensor

S. Narasimman, L. Balakrishnan, S. R. Meher, R. Sivacoumar and Z. C. Alex

AIP Conference Proceedings **1731**, 050052 (2016);
<https://doi.org/10.1063/1.4947706>

SHOW ABSTRACT

 No Access . May 2016


Hexagonal boron nitride nanoparticles decorated halloysite clay nanotubes as a potential hydrogen storage medium

R. Naresh Muthu, S. Rajashabala and R. Kannan

AIP Conference Proceedings **1731**, 050053 (2016);
<https://doi.org/10.1063/1.4947707>

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

 No Access . May 2016

1479 (2012) ✓

1478 (2012) ✓

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1463 (2012) ✓

1465 (2012) ✓

1459 (2012) ✓

A theoretical approach to study the melting temperature of metallic nanowires

Neha Arora and Deepika P. Joshi

AIP Conference Proceedings **1731**, 050054 (2016);
<https://doi.org/10.1063/1.4947708>

SHOW ABSTRACT



No Access . May 2016

Investigation of light induced effect on density of states of Pb doped CdSe thin films

Jagdish Kaur, Baljinder Singh and S. K. Tripathi

AIP Conference Proceedings **1731**, 050055 (2016);
<https://doi.org/10.1063/1.4947709>

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1462 (2012) ✓

1458 (2012) ✓

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1447 (2012) ✓

1448 (2012) ✓

1438 (2012) ✓



No Access . May 2016

Interaction of NO₂ and SO₂ with ZnO [10 $\bar{1}$ 0] surface using density functional theory

Satvinder Singh, Janpreet Singh, Gurinder Singh, Aman Kaura and S. K. Tripathi

AIP Conference Proceedings **1731**, 050056 (2016); <https://doi.org/10.1063/1.4947710>

SHOW ABSTRACT



No Access . May 2016

Fabrication of frequency selective surface for band stop IR-filter

Akshita Mishra, Sudheer, P. Tiwari, P. Mondal, H. Bhatt, V. N. Rai and A. K. Srivastava

AIP Conference Proceedings **1731**, 050057 (2016); <https://doi.org/10.1063/1.4947711>

SHOW ABSTRACT



No Access . May 2016

Energy storage performance of urea combustion derived nanocrystalline-Li₂MnSiO₄ as a novel electrode material for symmetric supercapacitor

Perna Chaturvedi, Anjan Sil and Yogesh Sharma

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1433 (2012) ✓


AIP Conference Proceedings **1731**, 050058 (2016);
<https://doi.org/10.1063/1.4947712>

1450 (2012) ✓

1436 (2012) ✓

SHOW ABSTRACT

1452 (2012) ✓

 No Access . May 2016

1437 (2012) ✓

Thermoluminescence property of nano scale Al_2O_3 : C by combustion method

1430 (2012) ✓

R. Bharthasaradhi and L. C. Nehru

1453 (2012) ✓

AIP Conference Proceedings **1731**, 050059 (2016);
<https://doi.org/10.1063/1.4947713>


1443 (2012) ✓

1429 (2012) ✓

SHOW ABSTRACT

1431 (2012) ✓

1439 (2012) ✓

 No Access . May 2016

1432 (2012) ✓

Influence of Fe ions on structural, optical and thermal properties of SnO_2 nanoparticles

1445 (2012) ✓

Ateeq Ahmed, P. Tripathi, Wasi Khan, Abid Ahmed
Dar and Tinku Ali

1427 (2012) ✓

AIP Conference Proceedings **1731**, 050060 (2016);
<https://doi.org/10.1063/1.4947714>

1426 (2012) ✓

1424 (2012) ✓

SHOW ABSTRACT

1428 (2012) ✓

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 No Access . May 2016

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Fabrication of transparent cellulose acetate/graphene oxide nanocomposite film for UV shielding

Nusrat Jahan, Wasi Khan, Ameer Azam and A. H. Naqvi

AIP Conference Proceedings **1731**, 050061 (2016);
<https://doi.org/10.1063/1.4947715>

SHOW ABSTRACT


 No Access . May 2016

Gold nanoparticles prepared by electro-exploding wire technique in aqueous solutions

Lalit Kumar, Akanksha Kapoor, Mayank Meghwal and S. Annapoorni


AIP Conference Proceedings **1731**, 050062 (2016);
<https://doi.org/10.1063/1.4947716>

SHOW ABSTRACT


 No Access . May 2016

Study of surface plasmon resonance of core-shell nanogeometry under the influence of perovskite dielectric environment: Electrostatic approximation



Loading [MathJax]/jax/output/HTML-CSS/jax.js Ash Kumar Pathak and R. P. Sharma


1407 (2011) 


AIP Conference Proceedings **1731**, 050063 (2016);
<https://doi.org/10.1063/1.4947717>

1409 (2011) 

SHOW ABSTRACT

1368 (2011) 1408 (2011) 




 No Access . May 2016

1404 (2011) 




Effects of annealed temperature on the properties of TiO₂ thin films


Avesh Kumar


AIP Conference Proceedings **1731**, 050064 (2016);
<https://doi.org/10.1063/1.4947718>

1397 (2011) 1405 (2011) 1372 (2011) 

SHOW ABSTRACT

1402 (2011) 1395 (2011) 1403 (2011) 




 No Access . May 2016

1401 (2011) 




Dielectric and magnetic behavior of nanocrystalline Cu_{0.4}Co_{0.6}Fe₂O₄ ferrite


Priya Jadoun, Jyoti Sharma, B. L. Prashant, S. N.
Dolia, Deepak Bhatnagar and V. K. Saxena

AIP Conference Proceedings **1731**, 050065 (2016);
<https://doi.org/10.1063/1.4947719>

1377 (2011) 1370 (2011) 1374 (2011) 

SHOW ABSTRACT

1388 (2011) 1391 (2011) 1396 (2011) 

 No Access . May 2016

Dielectrical properties of

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- 1380 (2011) 
- 1367 (2011) 
- 1379 (2011) 
- 1369 (2011) 
- 1366 (2011) 
- 1378 (2011) 

PANI/TiO₂ nanocomposites

V. S. Chaturmukha, C. S. Naveen, M. P. Rajeeva, B. S. Avinash, H. S. Jayanna and Ashok R. Lamani

AIP Conference Proceedings **1731**, 050066 (2016);
<https://doi.org/10.1063/1.4947720>

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 No Access . May 2016

Polyethylene glycol (PEG) assisted size-controlled SnO₂ nanoparticles by sol-gel process

P. Tripathi, Ateeq Ahmed, Tinku Ali and M. Obaidurrahman

AIP Conference Proceedings **1731**, 050067 (2016);
<https://doi.org/10.1063/1.4947721>

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 No Access . May 2016

Complex magnetic properties of TbMn_{1-x}Fe_xO₃ (x = 0.1 and 0.2) nanoparticles prepared by the sol-gel method

















A. Das, S. Bandyopadhyay, S. Chatterjee and D. Das

AIP Conference Proceedings **1731**, 050068 (2016);
<https://doi.org/10.1063/1.4947722>

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1361 (2011) 

SHOW ABSTRACT


1359 (2011) 1365 (2011) 1385 (2011) 1362 (2011) 1373 (2011) 1364 (2011) 1383 (2011) 1358 (2011) 1357 (2011) 1351 (2011) 1375 (2011) 1350 (2011) 1349 (2011) 1346 (2011) 1360 (2011) 1356 (2011) 1347 (2011)  No Access . May 2016

Synthesis and characterization of CdSe quantum dots dispersed in PVA matrix by chemical route

Zubair M. S. H. Khan, Mohsin Ganaie, Shamshad A. Khan, M. Husain and M. Zulfequar

AIP Conference Proceedings **1731**, 050069 (2016);
<https://doi.org/10.1063/1.4947723>

SHOW ABSTRACT


 No Access . May 2016

Studies of ferroelectric and dielectric properties of pure and doped barium titanate prepared by sol-gel method

Supriya Bisen, Ashutosh Mishra and Kanaka M. Jarabana

AIP Conference Proceedings **1731**, 050070 (2016);
<https://doi.org/10.1063/1.4947724>

SHOW ABSTRACT

 No Access . May 2016

Impedance spectroscopy study on graphene wrapped

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1342 (2011) ✓

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1353 (2011) ✓

1338 (2011) ✓

1348 (2011) ✓

1339 (2011) ✓


1340 (2011) ✓

nanocrystalline V₂O₅

D. Surya Bhaskaram, G. Govindaraj and Rajesh Cheruku

AIP Conference Proceedings **1731**, 050071 (2016);
<https://doi.org/10.1063/1.4947725>

SHOW ABSTRACT

 No Access . May 2016

α -hydroxy acids mediated synthesis of hollow silver nanoshells and their optical properties

B. Dadhich, A. Saha and A. Priyam

AIP Conference Proceedings **1731**, 050072 (2016);
<https://doi.org/10.1063/1.4947726>

SHOW ABSTRACT

 No Access . May 2016

Structural and photocatalytic studies on pure and Sn ion doped ZnO-graphene nanocomposites

Rosalin Beura and P. Thangadurai

AIP Conference Proceedings **1731**, 050073 (2016);
<https://doi.org/10.1063/1.4947727>

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1352 (2011) ✓

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 No Access . May 2016

Superparamagnetic behavior of heat treated $\text{Mg}_{0.5}\text{Zn}_{0.5}\text{Fe}_2\text{O}_4$ ferrite nanoparticles studied by Mössbauer spectroscopy

Ch. Srinivas, S. B. Singh, B. V. Tirupanyam, S. S. Meena, S. M. Yusuf, S. A. V. Prasad, K. S. Rama Krishna and D. L. Sastry

AIP Conference Proceedings **1731**, 050074 (2016);
<https://doi.org/10.1063/1.4947728>

SHOW ABSTRACT


 No Access . May 2016

Ferroelectric and photocatalytic behavior of bismuth ferrite nano wire

R. V. William, A. Marikani and D. Madhavan

AIP Conference Proceedings **1731**, 050075 (2016);
<https://doi.org/10.1063/1.4947729>

SHOW ABSTRACT

 No Access . May 2016

Study of electrical properties of W-type barium hexaferrite for high frequency application

Parul Sharma, Atul Thakur and Preeti Thakur

Loading [MathJax]/jax/output/HTML-CSS/jax.js

Conference Proceedings **1731**, 050076 (2016);

1314 (2010) ✓


<https://doi.org/10.1063/1.4947730>

1319 (2010) ✓

SHOW ABSTRACT

1312 (2010) ✓

1306 (2010) ✓

 No Access . May 2016

Effect of Cr doping on structural and magnetic properties of ZnS nanoparticles

Virpal, Jasvir Singh, Sandeep Sharma and Ravi Chand Singh

AIP Conference Proceedings **1731**, 050077 (2016);
<https://doi.org/10.1063/1.4947731>

1318 (2010) ✓

1310 (2010) ✓

1311 (2010) ✓


1313 (2010) ✓

1307 (2010) ✓

SHOW ABSTRACT

1301 (2010) ✓

1304 (2010) ✓

 No Access . May 2016

Preparation of ZnO nanoparticles showing upconversion luminescence through simple chemical method

R. Anjana, P. P. Subha, Kurias K. Markose and M. K. Jayaraj

AIP Conference Proceedings **1731**, 050078 (2016);
<https://doi.org/10.1063/1.4947732>

1303 (2010) ✓

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SHOW ABSTRACT

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No Access . May 2016

Accomplishment of highly porous-lithium lanthanum titanate through microwave treatment

D. Lakshmi, B. Nalini, K. P. Abhilash and P. Christopher Selvin

AIP Conference Proceedings **1731**, 050079 (2016);
<https://doi.org/10.1063/1.4947733>

SHOW ABSTRACT



No Access . May 2016

Structural, electronic and magnetic properties of Au-based monolayer derivatives in honeycomb structure

Pooja Kapoor, Munish Sharma, Ashok Kumar and P. K. Ahluwalia

AIP Conference Proceedings **1731**, 050080 (2016);
<https://doi.org/10.1063/1.4947734>

SHOW ABSTRACT



No Access . May 2016

Confinement of water molecule inside (2, 2) graphyne nanotube

Jyotirmoy Deb, Barnali Bhattacharya and Utpal

Loading [MathJax]/jax/output/HTML-CSS/jax.js kar

1280 (2010) ✓

AIP Conference Proceedings **1731**, 050081 (2016);
<https://doi.org/10.1063/1.4947735>

1278 (2010) ✓

1291 (2010) ✓

SHOW ABSTRACT

1283 (2010) ✓

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1265 (2010) ✓

1262 (2010) ✓

1259 (2010) ✓

1263 (2010) ✓


 No Access . May 2016

Study of O₂ sensitive photoluminescence of β -Ga₂O₃ nanostructures annealed in moist environments

R. Jangir, S. Porwal, Pragya Tiwari, S. K. Rai and Tapas Ganguli

AIP Conference Proceedings **1731**, 050082 (2016);
<https://doi.org/10.1063/1.4947736>

SHOW ABSTRACT


 No Access . May 2016

Micellar systems: Novel family for drug carriers

Meenakshi Rana and Papia Chowdhury

AIP Conference Proceedings **1731**, 050083 (2016);
<https://doi.org/10.1063/1.4947737>

SHOW ABSTRACT

 No Access . May 2016

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1260 (2010) ✓

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Cu₂ZnSnS₄ nanoflakes prepared by one step microwave irradiation technique: Effect of Cu concentration

S. P. Kandare, S. D. Dhole, V. N. Bhoraskar and S. S. Dahiwale

AIP Conference Proceedings **1731**, 050084 (2016);
<https://doi.org/10.1063/1.4947738>

SHOW ABSTRACT


 No Access . May 2016

Flake like V₂O₅ nanoparticles for ethanol sensing at room temperature

M. Chitra, K. Uthayarani, N. Rajasekaran, N. Neelakandeswari, E. K. Girija and D. Pathinettam Padiyan

AIP Conference Proceedings **1731**, 050085 (2016);
<https://doi.org/10.1063/1.4947739>

SHOW ABSTRACT

 No Access . May 2016

Tailoring oxidation of aluminum nanoparticles reinforced with carbon nanotubes

Manjula Sharma and Vimal Sharma

Loading [MathJax]/jax/output/HTML-CSS/jax.js Conference Proceedings **1731**, 050086 (2016);

1246 (2010) ✓


<https://doi.org/10.1063/1.4947740>

1239 (2010) ✓

SHOW ABSTRACT

1240 (2010) ✓

1255 (2010) ✓

 No Access . May 2016

Zeta-potential and particle size studies of silver sulphide nanoparticles

Vikash Sharma, Tarachand, V. Ganesan and Gunadhor S. Okram

AIP Conference Proceedings **1731**, 050087 (2016);
<https://doi.org/10.1063/1.4947741>

1238 (2010) ✓

1226 (2010) ✓

1254 (2010) ✓


1253 (2010) ✓

1245 (2010) ✓

SHOW ABSTRACT

1233 (2010) ✓

1237 (2010) ✓

 No Access . May 2016

Effect of temperature on the single-particle ground-state energy of a polar quantum dot with Gaussian confinement

Luhluh Jahan K. and Ashok Chatterjee

AIP Conference Proceedings **1731**, 050088 (2016);
<https://doi.org/10.1063/1.4947742>

1235 (2010) ✓

1230 (2010) ✓

1227 (2010) ✓


1232 (2010) ✓

1224 (2010) ✓

SHOW ABSTRACT

1231 (2010) ✓

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 No Access . May 2016

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1220 (2010) ✓

1213 (2010) ✓

1207 (2010) ✓

1211 (2010) ✓

1200 (2010) ✓

1214 (2010) ✓

characterization of PVP-PVA-ZnO blend polymer nano composite films

S. Divya, G. Saipriya and J. Hemalatha

AIP Conference Proceedings **1731**, 050089 (2016);
<https://doi.org/10.1063/1.4947743>

SHOW ABSTRACT

 No Access . May 2016

Dielectric, magnetic and electrical properties of $\text{Bi}_{0.5}\text{Na}_{0.5}\text{TiO}_3$ - $\text{CoMn}_{0.2}\text{Fe}_{1.8}\text{O}_4$ composites

Yogesh Kumar and K. L. Yadav

AIP Conference Proceedings **1731**, 050090 (2016);
<https://doi.org/10.1063/1.4947744>

SHOW ABSTRACT

 No Access . May 2016

Effect of cobalt doping on structural and optical properties of ZnO nanoparticles

J. Singh, A. Chanda, S. Gupta, P. Shukla and V. Chandra

AIP Conference Proceedings **1731**, 050091 (2016);
<https://doi.org/10.1063/1.4947745>

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1209 (2010) ✓

SHOW ABSTRACT

1208 (2010) ✓

1210 (2010) ✓

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 No Access . May 2016

Synthesis of chitosan supported palladium nanoparticles and its catalytic activity towards 2-nitrophenol reduction

S. Dhanavel, E. A. K. Nivethaa, G. Esther, V. Narayanan and A. Stephen

AIP Conference Proceedings **1731**, 050092 (2016);
<https://doi.org/10.1063/1.4947746>

SHOW ABSTRACT


 No Access . May 2016

Interaction of lysozyme protein with different sized silica nanoparticles and their resultant structures

Indresh Yadav, V. K. Aswal and J. Kohlbrecher



















AIP Conference Proceedings **1731**, 050093 (2016);
<https://doi.org/10.1063/1.4947747>

SHOW ABSTRACT

 No Access . May 2016

Electrical properties of films of zinc oxide nanoparticles

Loading [MathJax]/jax/output/HTML-CSS/jax.js


1192 (2009) 1191 (2009) 1187 (2009) 1189 (2009) 1181 (2009) 1184 (2009) 1183 (2009) 1188 (2009) 1180 (2009) 1179 (2009) 1186 (2009) 1178 (2009) 1175 (2009) 1177 (2009) 1174 (2009) 1176 (2009) 1173 (2009) 1171 (2009) 

and its hybrid with reduced graphene oxide

K. Priya Madhuri, K. Bramhaiah and Neena S. John

AIP Conference Proceedings **1731**, 050094 (2016);
<https://doi.org/10.1063/1.4947748>

SHOW ABSTRACT


 No Access . May 2016

Enhanced sensing of NH₃ gas by decorated multiwalled carbon nanotube

S. T. Hasnahena, Biswarup Satpati and Madhusudan Roy

AIP Conference Proceedings **1731**, 050095 (2016);
<https://doi.org/10.1063/1.4947749>

SHOW ABSTRACT


 No Access . May 2016

Structural and optical characterization of In₂O₃/PANI nanocomposite prepared by in-situ polymerization









Shashi Janeoo, Mamta Sharma, Gurinder Singh and J. Goswamy

AIP Conference Proceedings **1731**, 050096 (2016);
<https://doi.org/10.1063/1.4947750>

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1172 (2009) 

SHOW ABSTRACT










1167 (2009) 1170 (2009) 1169 (2009) 1161 (2009) 1168 (2009) 1166 (2009) 1160 (2009)  No Access . May 2016

Optical and x-ray photoelectron spectroscopy studies of α -Al₂O₃

Ram Prakash, Sandeep Kumar, Vinay Kumar, R. J. Choudhary and D. M. Phase

AIP Conference Proceedings **1731**, 050097 (2016);
<https://doi.org/10.1063/1.4947751>

SHOW ABSTRACT




1165 (2009) 1162 (2009) 1164 (2009) 1159 (2009) 1163 (2009) 1148 (2009) 1158 (2009) 1149 (2009)  No Access . May 2016

Study of structural modification of PVA by incorporating Ag nanoparticles

Isha Saini, Annu Sharma, Jyoti Rozra, Sanjeev Aggarwal, Rajnish Dhiman and Pawan K. Sharma

AIP Conference Proceedings **1731**, 050098 (2016);
<https://doi.org/10.1063/1.4947752>

SHOW ABSTRACT

1156 (2009) 1157 (2009)  No Access . May 2016

Effect of Zn-doping on structural and magnetic properties of copper ferrite

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1155 (2009) ✓

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1139 (2009) ✓

1136 (2009) ✓

1138 (2009) ✓


1133 (2009) ✓

nanoparticles

Nisha Gautam, Gadipelly Thirupathi and Rajender Singh

AIP Conference Proceedings **1731**, 050099 (2016);
<https://doi.org/10.1063/1.4947753>

SHOW ABSTRACT

 No Access . May 2016

Structural and spectroscopic properties of Li⁺ co-doped MgAl₂O₄: Eu³⁺ nanophosphors

Mohd. Faizan and Shabbir Ahmad

AIP Conference Proceedings **1731**, 050100 (2016);
<https://doi.org/10.1063/1.4947754>

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1135 (2009) ✓

1137 (2009) ✓

1131 (2009) ✓

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1111 (2009) ✓

1125 (2009) ✓


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1123 (2009) ✓

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1121 (2009) ✓

1129 (2009) ✓


 No Access . May 2016

Microstructural and thermal properties of pure BaFe₁₂O₁₉ and Sr doped barium ferrite (Ba_{0.9}Sr_{0.1}Fe₁₂O₁₉) synthesized by auto combustion method

Saba Taufeeq, Azra Parveen, Shraddha Agrawal and Ameer Azam

AIP Conference Proceedings **1731**, 050101 (2016);
<https://doi.org/10.1063/1.4947755>

SHOW ABSTRACT

 No Access . May 2016

Structural origination of charge transfer complex nanostructures: Excellent candidate for field emission

Shreyasi Pal and Kalyan Kumar Chattopadhyay


AIP Conference Proceedings **1731**, 050102 (2016);
<https://doi.org/10.1063/1.4947756>

SHOW ABSTRACT


 No Access . May 2016

Studies on magnetic properties of chemically synthesized crystalline calcium ferrite nanoparticles


Loading [MathJax]/jax/output/HTML-CSS/jax.js

1116 (2009) 



A. Debnath, A. Bera, K. K. Chattopadhyay and B. Saha


1119 (2009) 


AIP Conference Proceedings **1731**, 050103 (2016);
<https://doi.org/10.1063/1.4947757>

1115 (2009) 


SHOW ABSTRACT

1117 (2009) 1113 (2009) 



 No Access . May 2016

1110 (2009) 


Effect of Co doping on the structural and dielectric properties of ZnO nanoparticles

1112 (2009) 




Mast Ram, Kanchan Bala, Hakikat Sharma and N. S. Negi


1109 (2009) 1114 (2009) 


AIP Conference Proceedings **1731**, 050104 (2016);
<https://doi.org/10.1063/1.4947758>

1106 (2009) 


SHOW ABSTRACT

1105 (2009) 1108 (2009) 1104 (2009) 


 No Access . May 2016

1103 (2009) 



Molecular design of one dimensional magnetic FeNi₃ nanochains and their application in oil removal

1097 (2009) 

Kakoli Bhattacharya, Monika Gogoi and Pritam Deb

1100 (2009) 

AIP Conference Proceedings **1731**, 050105 (2016);
<https://doi.org/10.1063/1.4947759>

1101 (2009) 1099 (2009) 

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1102 (2009) ✓

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1089 (2009) ✓

1087 (2009) ✓

1084 (2008) ✓

1085 (2008) ✓

1080 (2008) ✓

1082 (2008) ✓



No Access . May 2016

MWCNT/CdS hybrid nanocomposite for enhanced photocatalytic activity

Deepti Chaudhary, Neeraj Khare and V. D. Vankar

AIP Conference Proceedings **1731**, 050106 (2016);
<https://doi.org/10.1063/1.4947760>

SHOW ABSTRACT



No Access . May 2016

Synthesis and characterization of zinc-molybdenum oxide photocatalysts using an electrochemical-thermal process

J. J. Goveas, R. A. Gonsalves, P. Rao and R. Pinto

AIP Conference Proceedings **1731**, 050107 (2016);
<https://doi.org/10.1063/1.4947761>

SHOW ABSTRACT





No Access . May 2016

Topotaxial growth of α -Fe₂O₃ nanowires on iron substrate




Himanshu Srivastava, A. K. Srivastava, Mahendra Babu, S. K. Rai and Tapas Ganguli

AIP Conference Proceedings **1731**, 050108 (2016);

Loading [MathJax]/jax/output/HTML-CSS/jax.js





1081 (2008) <https://doi.org/10.1063/1.4947762>1083 (2008) 

SHOW ABSTRACT




1078 (2008) 1079 (2008)  No Access . May 2016

Thermoluminescence characteristics of LiF: Cu nanocrystalline phosphor

Pooja Seth and Shruti Aggarwal






1075 (2008) AIP Conference Proceedings **1731**, 050109 (2016);
<https://doi.org/10.1063/1.4947763>1077 (2008) 1076 (2008) 1072 (2008) 

SHOW ABSTRACT



1074 (2008) 1073 (2008)  No Access . May 2016

Nanofibers of $\text{Ca}_2\text{Fe}_2\text{O}_5$: A novel material for aqueous supercapacitor


Sandeep Kumar Sundriyal, Jai Bhagwan and Yogesh Sharma

1060 (2008) 1066 (2008) AIP Conference Proceedings **1731**, 050110 (2016);
<https://doi.org/10.1063/1.4947764>1071 (2008) 1069 (2008) 1067 (2008) 

SHOW ABSTRACT

1068 (2008) 1070 (2008)  No Access . May 2016

Nanorods and nanoparticles of titanium dioxide and their

1063 (2008) 

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1065 (2008) ✓

use in dye sensitized solar cells

1058 (2008) ✓

R. Govindaraj, M. Magesh, M. Senthil Pandian, P. Ramasamy and Sumita Mukhopadhyay

1064 (2008) ✓


AIP Conference Proceedings **1731**, 050111 (2016);
<https://doi.org/10.1063/1.4947765>

1051 (2008) ✓

1061 (2008) ✓

SHOW ABSTRACT

1056 (2008) ✓

 No Access . May 2016

1059 (2008) ✓

Room temperature ammonia and VOC sensing properties of CuO nanorods

1062 (2008) ✓

S. Bhuvaneshwari and N. Gopalakrishnan

1053 (2008) ✓

AIP Conference Proceedings **1731**, 050112 (2016);
<https://doi.org/10.1063/1.4947766>

1052 (2008) ✓

1055 (2008) ✓

SHOW ABSTRACT

1054 (2008) ✓

1057 (2008) ✓

 No Access . May 2016

1050 (2008) ✓

Structural and electrical properties of functionalized multiwalled carbon nanotube/epoxy composite

1047 (2008) ✓

S. Gantayat, D. Rout and S. K. Swain

1049 (2008) ✓

AIP Conference Proceedings **1731**, 050113 (2016);
<https://doi.org/10.1063/1.4947767>

1046 (2008) ✓

1044 (2008) ✓

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1045 (2008) ✓

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1034 (2008) ✓

1035 (2008) ✓

1029 (2008) ✓

1031 (2008) ✓

1020 (2008) ✓



No Access . May 2016

DFT study of Al doped armchair SWCNTs

Shobhna Dhiman, Anita Rani, Ranjan Kumar and Keya Dharamvir

AIP Conference Proceedings **1731**, 050114 (2016);
<https://doi.org/10.1063/1.4947768>

SHOW ABSTRACT



No Access . May 2016

Exchange bias field in mixed arrangement of NiO-Ni nanoparticles

Sarveena, Shalendra Kumar, M. Singh and S. K. Sharma

AIP Conference Proceedings **1731**, 050115 (2016);
<https://doi.org/10.1063/1.4947769>

SHOW ABSTRACT




No Access . May 2016

Erbium induced magnetic properties of Er/ZnO nanoparticles


















C. Jayachandraiah, K. Sivakumar, A. Divya and G. Krishnaiah

AIP Conference Proceedings **1731**, 050116 (2016);
<https://doi.org/10.1063/1.4947770>

Loading [MathJax]/jax/output/HTML-CSS/jax.js

1027 (2008) 

SHOW ABSTRACT

1028 (2008) 1026 (2008) 1023 (2008) 1024 (2008) 1022 (2008) 1025 (2008) 1021 (2008) 1019 (2008) 1018 (2008) 1010 (2008) 1000 (2008) 1016 (2008) 1017 (2008) 1014 (2008) 1013 (2008) 1015 (2008) 1012 (2008)  No Access . May 2016

Hydrogen sensor based on Sm-doped SnO₂ nanostructures

Gurpreet Singh, Anita Hastir and Ravi Chand Singh

AIP Conference Proceedings **1731**, 050117 (2016);
<https://doi.org/10.1063/1.4947771>

SHOW ABSTRACT


 No Access . May 2016

Mn₃O₄-CeO₂ nano-catalysts: Synthesis, characterization and application

Anushree, C. Sharma and S. Kumar

AIP Conference Proceedings **1731**, 050118 (2016);
<https://doi.org/10.1063/1.4947772>

SHOW ABSTRACT

 No Access . May 2016

Citrate sol gel synthesis, phase formation, optical-properties and TEM analysis of nanocrystalline TaSr₂SmCu₂O₈ materials

Loading [MathJax]/jax/output/HTML-CSS/jax.js alamurugan, Jincymol George and P.

1007 (2008) ✓

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994 (2008) ✓

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Parthiban

AIP Conference Proceedings **1731**, 050119 (2016);
<https://doi.org/10.1063/1.4947773>

SHOW ABSTRACT

 No Access . May 2016

Structural, magnetic and electrical properties of samarium substituted multiferroic bismuth ferrite

M. Gowrishankar, D. Rajan Babu and S. Madeswaran

AIP Conference Proceedings **1731**, 050120 (2016);
<https://doi.org/10.1063/1.4947774>

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

989 (2008) ✓

985 (2008) ✓

991 (2008) ✓

988 (2008) ✓

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981 (2008) ✓

973 (2008) ✓

978 (2008) ✓

980 (2008) ✓

974 (2008) ✓


 No Access . May 2016

ZnO nanoparticles obtained by ball milling technique: Structural, micro-structure, optical and photo-catalytic properties

S. Balamurugan, Josny Joy, M. Anto Godwin, S. Selvamani and T. S. Gokul Raja

AIP Conference Proceedings **1731**, 050121 (2016);
<https://doi.org/10.1063/1.4947775>

SHOW ABSTRACT


 No Access . May 2016

Synthesis of gold nanostructures using fruit extract of *Garcinia Indica*

Krishnaprabha M. and Manjunatha Pattabi

AIP Conference Proceedings **1731**, 050122 (2016);
<https://doi.org/10.1063/1.4947776>

SHOW ABSTRACT

 No Access . May 2016

Modifications in structure and interaction of nanoparticle-protein-surfactant complexes in electrolyte solution

Sumit Mehan, S. Kumar, V. K. Aswal and R.

Loading [MathJax]/jax/output/HTML-CSS/jax.js weins

971 (2008) ✓


AIP Conference Proceedings **1731**, 050123 (2016);
<https://doi.org/10.1063/1.4947777>

972 (2008) ✓

976 (2008) ✓

SHOW ABSTRACT

969 (2008) ✓

 No Access . May 2016

970 (2008) ✓

Synthesis, optical and electrochemical properties of Zn-porphyrin for dye sensitized solar cell applications

968 (2008) ✓

S. Kotteswaran, M. Senthil Pandian and P. Ramasamy

966 (2008) ✓

963 (2007) ✓

AIP Conference Proceedings **1731**, 050124 (2016);
<https://doi.org/10.1063/1.4947778>

967 (2007) ✓

955 (2007) ✓

SHOW ABSTRACT

965 (2007) ✓

962 (2007) ✓

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946 (2007) ✓

941 (2007) ✓

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937 (2007) ✓

939 (2007) ✓


 No Access . May 2016

Chemical synthesis and characterization of PdTe-Ag₂Te nanowires heterostructure

Ranu Bhatt, Gopika Krishnan, Shovit Bhattacharya, Anil Bohra, Pramod Bhatt, Ranita Basu, Ajay Singh, D. K. Aswal and S. K. Gupta

AIP Conference Proceedings **1731**, 050125 (2016);
<https://doi.org/10.1063/1.4947779>

SHOW ABSTRACT


 No Access . May 2016

Optimization of lithography process for the fabrication of Micro-Faraday cup array

J. M. Arab, P. K. Brahmanekar, R. S. Pawade and A. K. Srivastava

AIP Conference Proceedings **1731**, 050126 (2016);
<https://doi.org/10.1063/1.4947780>

SHOW ABSTRACT

 No Access . May 2016

Structural, dielectric and impedance studies of polycrystalline La_{0.6}Gd_{0.2}Ca_{0.2}MnO₃

Indan K. R., A. Rubankumar and S. Kalainathan

Loading [MathJax]/jax/output/HTML-CSS/jax.js

938 (2007) ✓


AIP Conference Proceedings **1731**, 050127 (2016);
<https://doi.org/10.1063/1.4947781>

933 (2007) ✓

931 (2007) ✓

SHOW ABSTRACT

935 (2007) ✓

 No Access . May 2016

940 (2007) ✓

Anomalous carrier dynamics in bilayer graphene in presence of mechanical strain: A theoretical study

934 (2007) ✓

Enamullah

930 (2007) ✓

AIP Conference Proceedings **1731**, 050128 (2016);
<https://doi.org/10.1063/1.4947782>


936 (2007) ✓

932 (2007) ✓

SHOW ABSTRACT

929 (2007) ✓

924 (2007) ✓

 No Access . May 2016

928 (2007) ✓

Optical absorption and emission characterization of P3HT: graphene composite for its prospective photovoltaic application

925 (2007) ✓

Joginder Singh, Neetu Prasad, Varun Singh Nirwal,
Khyati Gautam, Koteswara Rao Peta and P. K.
Bhatnagar

927 (2007) ✓

AIP Conference Proceedings **1731**, 050129 (2016);
<https://doi.org/10.1063/1.4947783>

926 (2007) ✓

923 (2007) ✓

922 (2007) ✓

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SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

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906 (2007) ✓

905 (2007) ✓

899 (2007) ✓

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904 (2007) ✓

 No Access . May 2016

Computational study of a calcium release-activated calcium channel

Keka Talukdar and Anil Shantappa

AIP Conference Proceedings **1731**, 050130 (2016);
<https://doi.org/10.1063/1.4947784>

SHOW ABSTRACT


 No Access . May 2016

Crystal structure controlled synthesis and characterization of copper sulfide nanoparticles

M. Senthilkumar and S. Moorthy Babu

AIP Conference Proceedings **1731**, 050131 (2016);
<https://doi.org/10.1063/1.4947785>

SHOW ABSTRACT

 No Access . May 2016

Improved conversion efficiency of dye sensitized solar cell using Zn doped TiO₂-ZrO₂ nanocomposite

Laxmi J. Tomar, Piyush J. Bhatt, Rahul K. Desai, B. S. Chakrabarty and C. J. Panchal

AIP Conference Proceedings **1731**, 050132 (2016);

Loading [MathJax]/jax/output/HTML-CSS/jax.js

893 (2007) ✓


<https://doi.org/10.1063/1.4947786>

907 (2007) ✓

SHOW ABSTRACT

901 (2007) ✓

900 (2007) ✓

 No Access . May 2016

Effect of pH on particles size and gas sensing properties of In_2O_3 nanoparticles

Kanica Anand, Rengasamy Thangaraj and Ravi Chand Singh

AIP Conference Proceedings 1731, 050133 (2016);
<https://doi.org/10.1063/1.4947787>

902 (2007) ✓

897 (2007) ✓

895 (2007) ✓


894 (2007) ✓

898 (2007) ✓

SHOW ABSTRACT

896 (2007) ✓

892 (2007) ✓

 No Access . May 2016

Charge transfer interactions in oligomer coated gold nanoclusters

M. Boazbou Newmai and Pandian Senthil Kumar

AIP Conference Proceedings 1731, 050134 (2016);
<https://doi.org/10.1063/1.4947788>

891 (2007) ✓

890 (2007) ✓


889 (2007) ✓

888 (2007) ✓

SHOW ABSTRACT

884 (2007) ✓

885 (2007) ✓

 No Access . May 2016

Structural and optical characterization of NaGdF_4 :

887 (2007) ✓

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868 (2006) ✓

870 (2006) ✓

864 (2006) ✓


866 (2006) ✓

Ho³⁺/Yb³⁺ UC nano-particles for lateral finger mark detections

A. Kumar, S. P. Tiwari, K. M. Krishna and K. Kumar

AIP Conference Proceedings **1731**, 050135 (2016);
<https://doi.org/10.1063/1.4947789>

SHOW ABSTRACT


 No Access . May 2016

Temperature-dependent dielectric properties and line profile analysis of zinc-substituted copper ferrites

A. R. Lamani, H. S. Jayanna, C. S. Naveen, M. P. Rajeeva, G. D. Prasanna, V. S. Chaturmukha, B. M. Harish, S. Suresh and B. S. Avinash

AIP Conference Proceedings **1731**, 050136 (2016);
<https://doi.org/10.1063/1.4947790>

SHOW ABSTRACT


 No Access . May 2016

Atomic scale study of ball milled Ni-Fe₂O₃ using Mössbauer spectroscopy



Ravi Kumar Yadav, R. Govindaraj, K. Vinod, P. A. Manoj Kumar and G. Amarendra

AIP Conference Proceedings **1731**, 050137 (2016);
<https://doi.org/10.1063/1.4947791>

Loading [MathJax]/jax/output/HTML-CSS/jax.js





869 (2006) 

SHOW ABSTRACT





861 (2006)  No Access . May 2016865 (2006) 

Influence of Al₂O₃ on the ionic conductivity of plasticized PVC-PEG blend polymer electrolytes





D. Ravindran and P. Vickraman

867 (2006) 862 (2006) 863 (2006) AIP Conference Proceedings **1731**, 050138 (2016);
<https://doi.org/10.1063/1.4947792>860 (2006) 





SHOW ABSTRACT

859 (2006) 858 (2006)  No Access . May 2016857 (2006) 

Synthesis of NiO nanoparticles by a simple chemical method


Soumi Chatterjee, R. P. Maiti, S. K. Saha and
Dipankar Chakravorty855 (2006) 856 (2006) AIP Conference Proceedings **1731**, 050139 (2016);
<https://doi.org/10.1063/1.4947793>854 (2006) 850 (2006) 

SHOW ABSTRACT

848 (2006) 851 (2006)  No Access . May 2016852 (2006) 

Hydrothermal synthesis of vanadium pentoxide nanowires

J. Santhosh Kumar and P. Thangadurai

853 (2006) 

Loading [MathJax]/jax/output/HTML-CSS/jax.js

Conference Proceedings **1731**, 050140 (2016);

849 (2006) ✓


<https://doi.org/10.1063/1.4947794>

845 (2006) ✓

SHOW ABSTRACT

847 (2006) ✓

842 (2006) ✓

 No Access . May 2016

Ethanol gas sensing by Zn-doped CdS/CdTe nanoparticles

846 (2006) ✓

M. Prabhu, V. S. Manikandan, N. Soundararajan and K. Ramachandran

844 (2006) ✓

AIP Conference Proceedings **1731**, 050141 (2016);
<https://doi.org/10.1063/1.4947795>

843 (2006) ✓


841 (2006) ✓

840 (2006) ✓

SHOW ABSTRACT

839 (2006) ✓

838 (2006) ✓

 No Access . May 2016

Study of formation and influence of surface plasmonic silver nanoparticles in efficiency enhancement for c-Si solar cells

837 (2006) ✓

Bidyut Barman, Shiv Chaudhary, Abhishek Verma and V. K. Jain

836 (2006) ✓

AIP Conference Proceedings **1731**, 050142 (2016);
<https://doi.org/10.1063/1.4947796>

833 (2006) ✓

835 (2006) ✓


829 (2006) ✓

832 (2006) ✓

SHOW ABSTRACT

834 (2006) ✓

Loading [MathJax]/jax/output/HTML-CSS/jax.js

 No Access . May 2016


- 830 (2006) ✓
- 823 (2006) ✓
- 831 (2006) ✓
- 828 (2006) ✓
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- 819 (2006) ✓
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- 816 (2006) ✓
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- 814 (2006) ✓
- 815 (2006) ✓
- 817 (2006) ✓
- 813 (2006) ✓

Wide band gap gallium arsenide nanoparticles fabricated using plasma method

D. Jain, O. Mangla and S. Roy

AIP Conference Proceedings **1731**, 050143 (2016);
<https://doi.org/10.1063/1.4947797>

SHOW ABSTRACT


 No Access . May 2016

Thiourea-succinonitrile based polymer matrix for efficient and stable quasi solid state dye sensitized solar cells

Rakhi Grover, Himanshi Jauhari and Kanchan Saxena

AIP Conference Proceedings **1731**, 050144 (2016);
<https://doi.org/10.1063/1.4947798>



SHOW ABSTRACT

 No Access . May 2016




Experimental and theoretical spectroscopic studies of branchlet-like SrCO₃ superarchitecture

A. Divya, T. Mathavan, P. Arunarajeswari, J. Archana, Y. Hayakawa, Demeter Tzeli and A. Milton Franklin Benial

Loading [MathJax]/jax/output/HTML-CSS/jax.js Conference Proceedings **1731**, 050145 (2016);





812 (2006) <https://doi.org/10.1063/1.4947799>806 (2006) 

SHOW ABSTRACT




811 (2006) 809 (2006)  No Access . May 2016

Influence of Cr³⁺ ions on CoFe₂O₄ nanoparticles to increase the magnetic behaviour by exchange anisotropy

K. Venkatesan and D. Rajan Babu






AIP Conference Proceedings **1731**, 050146 (2016);
<https://doi.org/10.1063/1.4947800>810 (2006) 807 (2006) 805 (2005) 804 (2005) 

SHOW ABSTRACT




803 (2005) 801 (2005)  No Access . May 2016

Structural modification in the formation of starch – silver nanocomposites

S. N. Suraiya Begum, V. K. Aswal and Radha Perumal Ramasamy

AIP Conference Proceedings **1731**, 050147 (2016);
<https://doi.org/10.1063/1.4947801>802 (2005) 800 (2005) 798 (2005) 799 (2005) 796 (2005) 

SHOW ABSTRACT

797 (2005) 793 (2005)  No Access . May 2016

Loading [MathJax]/jax/output/HTML-CSS/jax.js

795 (2005) ✓

791 (2005) ✓

794 (2005) ✓

792 (2005) ✓

784 (2005) ✓

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788 (2005) ✓

785 (2005) ✓

780 (2005) ✓

778 (2005) ✓

783 (2005) ✓

782 (2005) ✓

781 (2005) ✓

779 (2005) ✓

777 (2005) ✓

Viscosity studies of water based magnetite nanofluids

K. Anu and J. Hemalatha

AIP Conference Proceedings **1731**, 050148 (2016);
<https://doi.org/10.1063/1.4947802>

SHOW ABSTRACT



No Access . May 2016

Hydrothermally synthesized barium fluoride nanocubes for thermoluminescence dosimetry

Mahesh S. Bhadane, S. S. Dahiwal, V. N. Bhoraskar and S. D. Dhole

AIP Conference Proceedings **1731**, 050149 (2016);
<https://doi.org/10.1063/1.4947803>

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

772 (2005) ✓

776 (2005) ✓

775 (2005) ✓

774 (2005) ✓

773 (2005) ✓

771 (2005) ✓

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762 (2005) ✓

768 (2005) ✓

770 (2005) ✓

766 (2005) ✓

765 (2005) ✓

767 (2005) ✓


759 (2005) ✓

756 (2005) ✓

761 (2005) ✓

760 (2005) ✓

763 (2005) ✓


 No Access . May 2016

Temperature dependent localized surface plasmon resonance properties of supported gold nanoparticles

Ranjit Laha and Pranay Ranjan

AIP Conference Proceedings **1731**, 050150 (2016);
<https://doi.org/10.1063/1.4947804>

SHOW ABSTRACT


 No Access . May 2016

Magnetic response of superparamagnetic multiferroic core-shell nanostructures

Ann Rose Abraham, B. Raneesh, Dipankar Das and Nandakumar Kalarikkal

AIP Conference Proceedings **1731**, 050151 (2016);
<https://doi.org/10.1063/1.4947805>

SHOW ABSTRACT

 No Access . May 2016

Structural and magnetic properties of Ni-Zn doped BaM nanocomposite via citrate precursor

Kush Rana, Preeti Thakur, Monika Tomar, Vinay

Loading [MathJax]/jax/output/HTML-CSS/jax.js pta and Atul Thakur

764 (2005) ✓

AIP Conference Proceedings **1731**, 050152 (2016);
<https://doi.org/10.1063/1.4947806>

758 (2005) ✓

.....

SHOW ABSTRACT

757 (2005) ✓


755 (2005) ✓

CONTRIBUTED PAPERS D.

Experimental Techniques and Devices

754 (2005) ✓

752 (2005) ✓

 No Access . May 2016

Alpha particle response study of polycrystalline diamond radiation detector

Amit Kumar and Anita Topkar

AIP Conference Proceedings **1731**, 060001 (2016);
<https://doi.org/10.1063/1.4947807>

753 (2005) ✓

748 (2005) ✓

751 (2005) ✓


749 (2005) ✓

745 (2005) ✓

SHOW ABSTRACT

750 (2005) ✓

747 (2005) ✓

 No Access . May 2016

LC nano composites based patch antenna @ 12 GHz frequency

Afaque Karim, Harsh Yadav, Shakebul Hasan and
Shakeb Ahmad

AIP Conference Proceedings **1731**, 060002 (2016);
<https://doi.org/10.1063/1.4947808>

746 (2005) ✓

744 (2004) ✓

743 (2004) ✓

742 (2004) ✓

741 (2004) ✓

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

737 (2004) ✓

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730 (2004) ✓

721 (2004) ✓


729 (2004) ✓

724 (2004) ✓

723 (2004) ✓

727 (2004) ✓

719 (2004) ✓


 No Access . May 2016

Luminescence studies of Eu-doped YBO₃ host

Ramya G. Nair, Sandeep Nigam, V. Sudarsan, B. S. Dhabekar and R. K. Vatsa

AIP Conference Proceedings **1731**, 060003 (2016);
<https://doi.org/10.1063/1.4947809>

SHOW ABSTRACT


 No Access . May 2016

Synthesis and optical properties of Pr and Ti doped BiFeO₃ ceramics

Vikash Singh, Subhash Sharma and R. K. Dwivedi

AIP Conference Proceedings **1731**, 060004 (2016);
<https://doi.org/10.1063/1.4947810>

SHOW ABSTRACT

 No Access . May 2016

Spray pyrolysed Cu₂ZnSnS₄/In₂S₃ thin film solar cell: Effect of varying copper concentration on cell parameters

M. R. Rajesh Menon, V. G. Rajeshmon, Titu Thomas, C. Sudha Kartha and K. P. Vijayakumar

AIP Conference Proceedings **1731**, 060005 (2016);

Loading [MathJax]/jax/output/HTML-CSS/jax.js

722 (2004) ✓


<https://doi.org/10.1063/1.4947811>

726 (2004) ✓

SHOW ABSTRACT

725 (2004) ✓

720 (2004) ✓

 No Access . May 2016

717 (2004) ✓

Improved conductivity of carbon-nano-fiber (CNF)/polytetrafluoroethylene (PTFE) composite

716 (2004) ✓

Sarita Chandra, G. S. Kalra, Vinay K. Pushkar, Variz Panwar, Fateh Singh Gill, Himanshu Gupta, Pankaj K. Pal, Trilok K. Pathak and L. P. Purohit

715 (2004) ✓

AIP Conference Proceedings **1731**, 060006 (2016);
<https://doi.org/10.1063/1.4947812>

718 (2004) ✓


706 (2004) ✓

714 (2004) ✓

SHOW ABSTRACT

711 (2004) ✓

713 (2004) ✓

 No Access . May 2016

Spectroscopic ellipsometry investigations of optical anisotropy in obliquely deposited hafnia thin films

710 (2004) ✓

R. B. Tokas, Shuvendu Jena, S. Maidul Haque, K. Divakar Rao, S. Thakur and N. K. Sahoo

712 (2004) ✓

AIP Conference Proceedings **1731**, 060007 (2016);
<https://doi.org/10.1063/1.4947813>

705 (2004) ✓

709 (2004) ✓

708 (2004) ✓

SHOW ABSTRACT

707 (2004) ✓

Loading [MathJax]/jax/output/HTML-CSS/jax.js

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690 (2003) ✓

688 (2003) ✓

687 (2003) ✓

689 (2003) ✓


 No Access . May 2016

Local structure investigation of Co doped ZnO thin films prepared by RF sputtering technique

A. K. Yadav, S. Maidul Haque, D. Shukla, D. M. Phase, S. N. Jha and D. Bhattacharyya

AIP Conference Proceedings **1731**, 060008 (2016);
<https://doi.org/10.1063/1.4947814>

SHOW ABSTRACT


 No Access . May 2016

Memory effects in a Al/Ti:HfO₂/CuPc metal-oxide-semiconductor device

Udbhav Tripathi and Ramneek Kaur

AIP Conference Proceedings **1731**, 060009 (2016);
<https://doi.org/10.1063/1.4947815>

SHOW ABSTRACT



 No Access . May 2016

Indigenous design and development of multiPSD array for time of flight neutron spectrometer





Shraddha S. Desai, Shylaja Devan, Amrita Das, S. M. Patkar and Mala N. Rao

Loading [MathJax]/jax/output/HTML-CSS/jax.js





Conference Proceedings **1731**, 060010 (2016);

685 (2003) <https://doi.org/10.1063/1.4947816>686 (2003) 





SHOW ABSTRACT

683 (2003) 684 (2003)  No Access . May 2016**Growth of Au@Pt coreshell nanoparticles: Probed by in-situ XANES and UV-visible spectroscopy**681 (2003) 





C. Nayak, K. Bhattacharyya, A. K. Tripathi, S. N. Jha, D. Bhattacharyya and N. K. Sahoo

682 (2003) AIP Conference Proceedings **1731**, 060011 (2016);
<https://doi.org/10.1063/1.4947817>679 (2003) 680 (2003) 678 (2003) 



SHOW ABSTRACT

677 (2003) 676 (2003)  No Access . May 2016**Diffraction enhance x-ray imaging for quantitative phase contrast studies**675 (2003) 



















A. K. Agrawal, B. Singh, Y. S. Kashyap, Mayank Shukla, P. S. Sarkar and Amar Sinha

671 (2003) AIP Conference Proceedings **1731**, 060012 (2016);
<https://doi.org/10.1063/1.4947818>674 (2003) 673 (2003) 672 (2003) 

SHOW ABSTRACT

670 (2003) 669 (2003)  No Access . May 2016**Ball fracture in aluminium**

Loading [MathJax]/jax/output/HTML-CSS/jax.js


668 (2003) 665 (2003) 666 (2003) 667 (2003) 664 (2003) 663 (2003) 662 (2003) 661 (2003) 660 (2003) 659 (2003) 657 (2003) 658 (2003) 656 (2003) 655 (2003) 654 (2003) 653 (2003) 652 (2003) 651 (2002) 

alloy at high strain rates

K. D. Joshi, Amit Rav, Amit Sur, T. C. Kaushik and Satish C. Gupta

AIP Conference Proceedings **1731**, 060013 (2016);
<https://doi.org/10.1063/1.4947819>

SHOW ABSTRACT


 No Access . May 2016

Cross-sectional TEM specimen preparation for W/B₄C multilayer sample using FIB

Puspen Mondal, P. C. Pradhan, Pragya Tiwari and A. K. Srivastava

AIP Conference Proceedings **1731**, 060014 (2016);
<https://doi.org/10.1063/1.4947820>

SHOW ABSTRACT

 No Access . May 2016

Fabrication of soft x-ray Fresnel zone plate on ultrathin membrane

Pragya Tiwari, Puspen Mondal and A. K. Srivastava

AIP Conference Proceedings **1731**, 060015 (2016);
<https://doi.org/10.1063/1.4947821>

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

648 (2002) ✓

650 (2002) ✓

649 (2002) ✓

647 (2002) ✓

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640 (2002) ✓

639 (2002) ✓

638 (2002) ✓

637 (2002) ✓

636 (2002) ✓

635 (2002) ✓

634 (2002) ✓

633 (2002) ✓



No Access . May 2016

Growth and characterization of macroscopic reduced graphene oxide paper for device application

Rajinder Singh, Sanjeev Kumar, Aman Mahajan and R. K. Bedi

AIP Conference Proceedings **1731**, 060016 (2016);
<https://doi.org/10.1063/1.4947822>

SHOW ABSTRACT



No Access . May 2016

Co-sensitization of natural dyes for improved efficiency in dye-sensitized solar cell application

K. Ashok Kumar, K. Subalakshmi and J. Senthilselvan

AIP Conference Proceedings **1731**, 060017 (2016);
<https://doi.org/10.1063/1.4947823>

SHOW ABSTRACT



No Access . May 2016

High intensity multi beam design of SANS instrument for Dhruva reactor

Sohrab Abbas, S. Désert and V. K. Aswal

Loading [MathJax]/jax/output/HTML-CSS/jax.js

Conference Proceedings **1731**, 060018 (2016);

631 (2002) ✓


<https://doi.org/10.1063/1.4947824>

632 (2002) ✓

SHOW ABSTRACT

629 (2002) ✓

628 (2002) ✓

 No Access . May 2016

Local structure studies of Fe_2TeO_6 using x-ray absorption spectroscopy

627 (2002) ✓

Harishchandra Singh and A. K. Yadav

630 (2002) ✓

AIP Conference Proceedings **1731**, 060019 (2016);
<https://doi.org/10.1063/1.4947825>


625 (2002) ✓

626 (2002) ✓

SHOW ABSTRACT

624 (2002) ✓

623 (2002) ✓

 No Access . May 2016

Low laser power micro-Raman study of $\text{Co}_{(1-x)}\text{Mn}_{(x)}\text{Fe}_2\text{O}_4$ prepared by flash combustion method

620 (2002) ✓

J. D. Baraliya

622 (2002) ✓

AIP Conference Proceedings **1731**, 060020 (2016);
<https://doi.org/10.1063/1.4947826>

621 (2002) ✓


619 (2002) ✓

615 (2002) ✓

SHOW ABSTRACT

618 (2002) ✓


















614 (2002) ✓

 No Access . May 2016

Dielectric parameter estimation of novel magneto-

617 (2002) ✓

Loading [MathJax]/jax/output/HTML-CSS/jax.js


613 (2002) 616 (2002) 612 (2002) 611 (2002) 610 (2002) 609 (2002) 605 (2002) 607 (2002) 606 (2002) 608 (2002) 604 (2002) 603 (2001) 602 (2001) 600 (2001) 599 (2001) 598 (2001) 597 (2001) 601 (2001) 

dielectric substrate based microstrip antenna

Ashish Saini, P. Kumar, B. Ravelo, Atul Thakur and Preeti Thakur

AIP Conference Proceedings **1731**, 060021 (2016);
<https://doi.org/10.1063/1.4947827>

SHOW ABSTRACT


 No Access . May 2016

Thin epitaxial silicon PIN detectors for thermal neutron detection with improved gamma (γ) discrimination

Arvind Singh and Anita Topkar

AIP Conference Proceedings **1731**, 060022 (2016);
<https://doi.org/10.1063/1.4947828>

SHOW ABSTRACT


 No Access . May 2016

A novel pulse processing scheme using embedded pulsed reset charge sensitive preamplifier















G. Prasanna, J. Jayapandian, O. K. Sheela and G. Amarendra

AIP Conference Proceedings **1731**, 060023 (2016);
<https://doi.org/10.1063/1.4947829>

Loading [MathJax]/jax/output/HTML-CSS/jax.js

596 (2001) 

SHOW ABSTRACT


591 (2001) 595 (2001) 594 (2001) 593 (2001) 592 (2001) 590 (2001) 586 (2001) 587 (2001) 589 (2001) 588 (2001) 585 (2001) 584 (2001) 583 (2001) 571 (2001) 581 (2001) 582 (2001) 580 (2001)  No Access . May 2016

LED based evanescent wave fiber optic sensor technique to detect Fe⁺² concentration

V. K. Kulkarni, H. H. Bendigeri and R. M. Kulkarni

AIP Conference Proceedings **1731**, 060024 (2016);
<https://doi.org/10.1063/1.4947830>

SHOW ABSTRACT


 No Access . May 2016

Pump probe based Raman spectroscopic studies of PTFE under laser driven shock compression

Vinay Rastogi, Usha Rao, S. Chaurasia, A. K. Mishra, H. K. Poswal, M. N. Deo and S. M. Sharma

AIP Conference Proceedings **1731**, 060025 (2016);
<https://doi.org/10.1063/1.4947831>

SHOW ABSTRACT

 No Access . May 2016

EXAFS measurements on Mn doped CaF₂ phosphor with different Mn concentrations

Loading [MathJax]/jax/output/HTML-CSS/jax.js Patra, A. K. Bakshi and D. Bhattacharyya

579 (2001) ✓

AIP Conference Proceedings **1731**, 060026 (2016);
<https://doi.org/10.1063/1.4947832>

576 (2001) ✓

578 (2001) ✓


SHOW ABSTRACT

577 (2001) ✓

CONTRIBUTED PAPERS E. Glasses and Amorphous Systems

572 (2001) ✓

573 (2001) ✓

 No Access . May 2016

575 (2001) ✓

Emission characteristics of holmium ions in fluoro- phosphate glasses for photonic applications

574 (2001) ✓

S. Babu and Y. C. Ratnakaram

570 (2001) ✓

AIP Conference Proceedings **1731**, 070001 (2016);
<https://doi.org/10.1063/1.4947833>


569 (2001) ✓

566 (2001) ✓

SHOW ABSTRACT

568 (2001) ✓

567 (2001) ✓

 No Access . May 2016

565 (2001) ✓

Theoretical prediction of Grüneisen parameter for SiO₂.TiO₂ bulk metallic glasses

557 (2001) ✓

Chandra K. Singh, Anjani K. Pandey and Brijesh K.
Pandey

564 (2001) ✓

AIP Conference Proceedings **1731**, 070002 (2016);
<https://doi.org/10.1063/1.4947834>

563 (2001) ✓

562 (2001) ✓

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

561 (2001) ✓

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548 (2000) ✓


545 (2000) ✓

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544 (2000) ✓

542 (2000) ✓


 No Access . May 2016

Visible properties of Sm³⁺ ions in chloro-fluoro-borate glasses for reddish - orange emission

K. Venkata Rao, S. Babu, B. Venkata Rao and Y. C. Ratnakaram

AIP Conference Proceedings **1731**, 070003 (2016);
<https://doi.org/10.1063/1.4947835>

SHOW ABSTRACT


 No Access . May 2016

Glass transition phenomena in D-xylose aqueous solutions: A broadband dielectric spectroscopy study

Lokendra P. Singh

AIP Conference Proceedings **1731**, 070004 (2016);
<https://doi.org/10.1063/1.4947836>

SHOW ABSTRACT

 No Access . May 2016

Investigating the effect of V₂O₅ addition on sodium barium borosilicate glasses

Rumu Halder, Pranesh Sengupta, V. Sudarsan, C. P. Kaushik and G. K. Dey

Loading [MathJax]/jax/output/HTML-CSS/jax.js

Conference Proceedings **1731**, 070005 (2016);

543 (2000) ✓


<https://doi.org/10.1063/1.4947837>

541 (2000) ✓

SHOW ABSTRACT

537 (2000) ✓

539 (2000) ✓

 No Access . May 2016

Optical absorption and TEM studies of silver nanoparticle embedded BaO-CaF₂-P₂O₅ glasses

Manoj Kumar Narayanan and H. D. Shashikala

AIP Conference Proceedings 1731, 070006 (2016);

<https://doi.org/10.1063/1.4947838>

540 (2000) ✓

538 (2000) ✓

528 (2000) ✓


536 (2000) ✓

SHOW ABSTRACT

535 (2000) ✓

526 (2000) ✓

531 (2000) ✓

 No Access . May 2016

Microstructural and electrical properties of PVA/PVP polymer blend films doped with cupric sulphate

K. Hemalatha, Mahadevaiah, G. K. Gowtham, G.

Thejas Urs, H. Somashekarappa and R.

Somashekar

AIP Conference Proceedings 1731, 070007 (2016);

<https://doi.org/10.1063/1.4947839>

533 (2000) ✓

530 (2000) ✓

534 (2000) ✓

524 (2000) ✓


529 (2000) ✓

527 (2000) ✓

SHOW ABSTRACT

532 (2000) ✓

Loading [MathJax]/jax/output/HTML-CSS/jax.js

 No Access . May 2016

525 (2000) ✓

521 (2000) ✓

522 (2000) ✓

519 (2000) ✓

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515 (2000) ✓

512 (2000) ✓

517 (2000) ✓

518 (2000) ✓

514 (2000) ✓

509 (2000) ✓

507 (2000) ✓

505 (2000) ✓

510 (2000) ✓

513 (2000) ✓


511 (2000) ✓

Influence of silver nanoparticles on the spectroscopic properties of Sm³⁺ doped boro-phosphate glasses

P. Suthanthirakumar and K. Marimuthu

AIP Conference Proceedings **1731**, 070008 (2016);
<https://doi.org/10.1063/1.4947840>

SHOW ABSTRACT


 No Access . May 2016

Optical properties of Dy³⁺ doped bismuth boro-tellurite glasses for WLED applications

P. Karthikeyan and K. Marimuthu

AIP Conference Proceedings **1731**, 070009 (2016);
<https://doi.org/10.1063/1.4947841>

SHOW ABSTRACT



 No Access . May 2016

The effects of swift heavy ion irradiation on the structural properties of poly(lactide-co-glycolide)/clay nanocomposite




Manpreet Kaur, Surinder Singh and Rajeev Mehta

AIP Conference Proceedings **1731**, 070010 (2016);

Loading [MathJax]/jax/output/HTML-CSS/jax.js

508 (2000) <https://doi.org/10.1063/1.4947842>503 (2000) 







SHOW ABSTRACT

506 (2000) 500 (2000)  No Access . May 2016



NIR luminescence studies on Er³⁺:Yb³⁺ co-doped sodium telluroborate glasses for lasers and optical amplifier applications

K. Annapoorani, N. Suriya Murthy and K. Marimuthu

AIP Conference Proceedings **1731**, 070011 (2016);
<https://doi.org/10.1063/1.4947843>

502 (2000) 501 (2000) 504 (2000) 499 (1999) 498 (1999) 496 (1999) 






SHOW ABSTRACT

497 (1999) 494 (1999)  No Access . May 2016

The effect of ZnO addition on thermo-physical and structural properties of 45S5 bioactive glass/glass-microspheres

K. Sharma, C. B. Basak, M. N. Deo, M. Goswami and Madangopal Krishnan

AIP Conference Proceedings **1731**, 070012 (2016);
<https://doi.org/10.1063/1.4947844>

493 (1999) 495 (1999) 492 (1999) 491 (1999) 489 (1999) 490 (1999) 

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

487 (1999) ✓

488 (1999) ✓

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471 (1999) ✓

479 (1999) ✓

477 (1999) ✓


475 (1999) ✓

480 (1999) ✓

476 (1999) ✓

474 (1999) ✓

470 (1999) ✓


 No Access . May 2016

Silk fibroin/pullulan blend films: Preparation and characterization

C. S. Shivananda, B. Lakshmeesha Rao, R. Madhukumar, B. K. Sarojini, R. Somashekhar, S. Asha and Y. Sangappa

AIP Conference Proceedings **1731**, 070013 (2016);
<https://doi.org/10.1063/1.4947845>

SHOW ABSTRACT


 No Access . May 2016

Influence of gamma irradiation on structural, thermal and antibacterial properties of HPMC/ZnO nanocomposites

B. Lakshmeesha Rao, R. Madhukumar, S. Latha, G. Rajesha Shetty, C. S. Shivananda, K. Sharath Chandra and Y. Sangappa
















AIP Conference Proceedings **1731**, 070014 (2016);
<https://doi.org/10.1063/1.4947846>

SHOW ABSTRACT

 No Access . May 2016

The gamma irradiation effects on structural and optical properties of silk

Loading [MathJax]/jax/output/HTML-CSS/jax.js


- 473 (1999) 
- 469 (1999) 
- 468 (1999) 
- 466 (1999) 
- 467 (1999) 
- 465 (1999) 
- 463 (1999) 
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- 456 (1998) 

fibroin/HPMC blend films

G. Rajesha Shetty, B. Lakshmeesha Rao,
Mahadeva Gowda, C. S. Shivananda, S. Asha, K.
Byrappa and Y. Sangappa

AIP Conference Proceedings **1731**, 070015 (2016);
<https://doi.org/10.1063/1.4947847>

SHOW ABSTRACT


 No Access . May 2016

Degradation studies of 1, 6-diisocyanatohexane-extended poly (1, 4-butylene succinate) - bioactive glass scaffolds for bone tissue repair applications

Kulwinder Kaur, K. J. Singh and Vikas Anand

AIP Conference Proceedings **1731**, 070016 (2016);
<https://doi.org/10.1063/1.4947848>

SHOW ABSTRACT

 No Access . May 2016

Composition dependent spectroscopic properties of Nd³⁺ doped sodium lead borate glasses

Shaweta Mohan and Kulwant Singh Thind

AIP Conference Proceedings **1731**, 070017 (2016);
<https://doi.org/10.1063/1.4947849>

Loading [MathJax]/jax/output/HTML-CSS/jax.js

451 (1998) ✓

SHOW ABSTRACT

449 (1998) ✓

452 (1998) ✓

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SHOW ABSTRACT

438 (1998) ✓


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437 (1998) ✓




 No Access . May 2016

Dielectric properties of nickel doped bismuth lithium borate glasses


Loading [MathJax]/jax/output/HTML-CSS/jax.js ma Dalal, Sunita Dahiya, Ashima and S. Khasa

434 (1998) AIP Conference Proceedings **1731**, 070020 (2016);
<https://doi.org/10.1063/1.4947852>436 (1998) 433 (1998) 






SHOW ABSTRACT

430 (1998)  No Access . May 2016432 (1998) **Surface morphology study of
Zr-based amorphous alloys
after immersion in boiling
nitric acid medium**428 (1998) 


Poonam Sharma, Anil Dhawan and S. K. Sharma

427 (1998) 431 (1998) AIP Conference Proceedings **1731**, 070021 (2016);
<https://doi.org/10.1063/1.4947853>426 (1998) 

SHOW ABSTRACT

425 (1998) 424 (1998)  No Access . May 2016423 (1998) **Dielectric relaxation in AgI
doped silver selenomolybdate
glasses**422 (1998) 

A. Palui, A. Shaw and A. Ghosh

421 (1998) AIP Conference Proceedings **1731**, 070022 (2016);
<https://doi.org/10.1063/1.4947854>420 (1998) 419 (1998) 

SHOW ABSTRACT

418 (1998) 417 (1997)  No Access . May 2016**Quantitative investigation of**

Loading [MathJax]/jax/output/HTML-CSS/jax.js

416 (1997) ✓

415 (1997) ✓

414 (1997) ✓

413 (1997) ✓

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399 (1997) ✓

light induced defects in glassy $\text{Se}_{90}\text{Ag}_{10}$ thin films

Anjani Kumar, D. Kumar, Prabhat K. Dwivedi and A. Kumar

AIP Conference Proceedings **1731**, 070023 (2016);
<https://doi.org/10.1063/1.4947855>

SHOW ABSTRACT

 No Access . May 2016

Investigations on oxyhalide glasses synthesized by microwave assisted process

D. Vijayatha, R. Viswanatha, C. S. Somashekaraiah and C. Narayana Reddy

AIP Conference Proceedings **1731**, 070024 (2016);
<https://doi.org/10.1063/1.4947856>

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

398 (1997) ✓

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396 (1997) ✓

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381 (1996) ✓


 No Access . May 2016

Non-Debye dipoles and their relaxation dynamics for the description of dielectric spectra

G. Govindaraj

AIP Conference Proceedings **1731**, 070025 (2016);
<https://doi.org/10.1063/1.4947857>

SHOW ABSTRACT

 No Access . May 2016

Molecular relaxations in amorphous phenylbutazone

M. Sahra, M. Shahin Thayyil and S. Capaccioli

AIP Conference Proceedings **1731**, 070026 (2016);
<https://doi.org/10.1063/1.4947858>

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

380 (1996) ✓

379 (1996) ✓

378 (1996) ✓

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366 (1996) ✓

365 (1996) ✓

364 (1996) ✓

363 (1996) ✓



No Access . May 2016

Ionic conduction in polymer composite electrolytes

Tapabrata Dam, Satya N. Tripathy, M. Paluch, S. Jena and D. K. Pradhan

AIP Conference Proceedings **1731**, 070027 (2016);
<https://doi.org/10.1063/1.4947859>

SHOW ABSTRACT



No Access . May 2016

Differential scanning calorimetry in determining kinetics parameter of Si oxidation

Sk. Abdul Kader Md. Faruque and Supratic Chakraborty

AIP Conference Proceedings **1731**, 070028 (2016);
<https://doi.org/10.1063/1.4947860>

SHOW ABSTRACT




No Access . May 2016

Transport properties of phospho-vanadate glasses containing bismuth



Sangeeta B. Kolavekar, N. H. Ayachit, Vinayak Pattar and R. V. Anavekar

AIP Conference Proceedings **1731**, 070029 (2016);


Loading [MathJax]/jax/output/HTML-CSS/jax.js

362 (1996) <https://doi.org/10.1063/1.4947861>361 (1996) 


SHOW ABSTRACT

360 (1996) 359 (1996)  No Access . May 2016


Effect of argon ion implantation on the electrical and dielectric properties of CR-39

358 (1996) 




Mahak Chawla, Nidhi Shekhawat, Meetika Goyal, Divya Gupta, Annu Sharma and Sanjeev Aggarwal

357 (1996) 

AIP Conference Proceedings **1731**, 070030 (2016);
<https://doi.org/10.1063/1.4947862>

356 (1996) 355 (1996) 


SHOW ABSTRACT

354 (1996) 353 (1996) 352 (1996)  No Access . May 2016



Functional data analysis of experimental parameters obtained in PVA doped CdCl₂ polymer composites

351 (1996) 


M. B. Nanda Prakash, Gopal Krishne Urs and R. Somashekar

349 (1996) 

AIP Conference Proceedings **1731**, 070031 (2016);
<https://doi.org/10.1063/1.4947863>

348 (1996) 350 (1995) 347 (1995) 

SHOW ABSTRACT

346 (1995) 345 (1995) 

Loading [MathJax]/jax/output/HTML-CSS/jax.js

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327 (1995) ✓

Characterization of proton conducting blend polymer electrolyte using PVA-PAN doped with NH_4SCN

M. Premalatha, T. Mathavan, S. Selvasekarapandian, F. Kingslin Mary Genova and R. Umamaheswari

AIP Conference Proceedings **1731**, 070032 (2016);
<https://doi.org/10.1063/1.4947864>

SHOW ABSTRACT


 No Access . May 2016

Optical studies of pure $\text{Te}_{90}\text{Se}_{10}$ and $\text{Se}_{90}\text{Te}_{10}$ chalcogenide

Arvind Kumar Verma, Nishant Kumar, Anchal Srivastava and R. K. Shukla

AIP Conference Proceedings **1731**, 070033 (2016);
<https://doi.org/10.1063/1.4947865>

SHOW ABSTRACT


 No Access . May 2016

Study of semiconducting parameters in dark as well as in presence of light for $\text{Se}_{90}\text{X}_{10}$ ($\text{X}=\text{Ag},\text{In}$) thin films


N. K. Singh, Anjani Kumar, D. Kumar and S. Shukla

AIP Conference Proceedings **1731**, 070034 (2016);



Loading [MathJax]/jax/output/HTML-CSS/jax.js

326 (1995) <https://doi.org/10.1063/1.4947866>325 (1995) 


SHOW ABSTRACT

324 (1995) 322 (1995)  No Access . May 2016**A study of physical and optical absorption spectra of VO²⁺ ions in potassium and sodium oxide borate glasses**321 (1995) 

G. Srinivas, B. Ramesh, J. Siva Kumar, Md. Shareefuddin, M. N. Chary and R. Sayanna

320 (1995) AIP Conference Proceedings **1731**, 070035 (2016); <https://doi.org/10.1063/1.4947867>294 (1994) 289 (1994) 319 (1994) 

SHOW ABSTRACT

318 (1994) 317 (1994)  No Access . May 2016**DSC and Raman studies of silver borotellurite glasses**316 (1994) 














Amandeep Kaur, Atul Khanna and Fernando González

315 (1994) AIP Conference Proceedings **1731**, 070036 (2016); <https://doi.org/10.1063/1.4947868>323 (1994) 314 (1994) 

SHOW ABSTRACT

313 (1994) 312 (1994) 311 (1994)  No Access . May 2016**Electronic properties of liquid Mg-In alloys : Ab-initio**

Loading [MathJax]/jax/output/HTML-CSS/jax.js


310 (1994) 309 (1994) 308 (1994) 307 (1994) 301 (1994) 306 (1994) 305 (1994) 304 (1994) 303 (1994) 302 (1994) 300 (1994) 296 (1994) 284 (1994) 299 (1994) 298 (1994) 295 (1993) 293 (1993) 291 (1993) 

molecular dynamics study

Nalini Sharma, Anil Thakur and P. K. Ahluwalia

AIP Conference Proceedings **1731**, 070037 (2016);
<https://doi.org/10.1063/1.4947869>

SHOW ABSTRACT


 No Access . May 2016

Physical and optical absorption studies of Fe³⁺ - ions doped lithium borate glasses containing certain alkaline earths

Ashok Bhogi, R. Vijaya Kumar and P. Kistaiah

AIP Conference Proceedings **1731**, 070038 (2016);
<https://doi.org/10.1063/1.4947870>

SHOW ABSTRACT

 No Access . May 2016

Thermal and structural properties of zinc modified tellurite based glasses

R. S. Kundu, Sunil Dhankhar, R. Punia, Meenakshi Dult and N. Kishore

AIP Conference Proceedings **1731**, 070039 (2016);
<https://doi.org/10.1063/1.4947871>

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

290 (1993) ✓

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 No Access . May 2016

Synthesis and characterization of $64\text{SiO}_2-26\text{CaO}-5\text{P}_2\text{O}_5-5\text{CuO}$ bioactive composition for the growth of hydroxyapatite layer by XRD, Raman and pH studies

Pardeep Kaur and K. J. Singh

AIP Conference Proceedings **1731**, 070040 (2016);
<https://doi.org/10.1063/1.4947872>

SHOW ABSTRACT


 No Access . May 2016

Investigations on the structure of Pb-Ge-Se glasses

G. Kalra, M. Upadhyay, Y. Sharma, S. Abhaya, S. Murugavel and G. Amarendra

AIP Conference Proceedings **1731**, 070041 (2016);
<https://doi.org/10.1063/1.4947873>

SHOW ABSTRACT

 No Access . May 2016

Structure and transport investigations on lithium-iron-phosphate glasses

Azeem Bandy, Monika Sharma and Sevi

Loading [MathJax]/jax/output/HTML-CSS/jax.js rugavel

263 (1992) ✓


AIP Conference Proceedings **1731**, 070042 (2016);
<https://doi.org/10.1063/1.4947874>

262 (1992) ✓

282 (1992) ✓

SHOW ABSTRACT

261 (1992) ✓

 No Access . May 2016

281 (1992) ✓

Spectroscopic and energy transfer studies of Er³⁺ ions in B₂O₃-TeO₂-MgO-ZnO glasses

260 (1992) ✓

M. Vijayakumar, S. Arunkumar, K. Maheshvaran and K. Marimuthu

259 (1992) ✓

279 (1992) ✓


AIP Conference Proceedings **1731**, 070043 (2016);
<https://doi.org/10.1063/1.4947875>

258 (1992) ✓

SHOW ABSTRACT

278 (1992) ✓

277 (1992) ✓

 No Access . May 2016

257 (1992) ✓

Role of thermal history in atomic dynamics of chalcogenide glass: A case study on Ge₂₀Te₈₀ glass

256 (1992) ✓

Yashika Sharma, Geetanjali Kalra and Sevi Murugavel

255 (1992) ✓

254 (1992) ✓

AIP Conference Proceedings **1731**, 070044 (2016);
<https://doi.org/10.1063/1.4947876>

253 (1992) ✓

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SHOW ABSTRACT

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265 (1991) ✓


237 (1991) ✓

Luminescence properties of Tm^{3+}/Yb^{3+} codoped lead alumina bismuth borate glasses

K. Krishna Murthy Goud, M. Chandra Shekhar Reddy and B. Appa Rao

AIP Conference Proceedings **1731**, 070045 (2016);
<https://doi.org/10.1063/1.4947877>

SHOW ABSTRACT

 No Access . May 2016


Calorimetric study of tellurium rich Se-Te-Sn glasses

Pawan Heera, Anup Kumar, Manish Jharwal and Raman Sharma

AIP Conference Proceedings **1731**, 070046 (2016);
<https://doi.org/10.1063/1.4947878>

SHOW ABSTRACT

CONTRIBUTED PAPERS F. Surfaces, Interfaces and Thin Films

 No Access . May 2016

Kramers-Kronig analysis of soft x-ray reflectivity data of platinum thin film in 40-200 Å wavelength region

Saurabh Sharma, R. K. Gupta, Mangalika Sinha, P. Jav, Amol Singh and Mohammed H. Modi

Loading [MathJax]/jax/output/HTML-CSS/jax.js

236 (1991) ✓

AIP Conference Proceedings **1731**, 080001 (2016);
<https://doi.org/10.1063/1.4947879>


234 (1991) ✓

233 (1991) ✓

SHOW ABSTRACT

232 (1991) ✓

231 (1991) ✓

 No Access . May 2016

Nano-engineered optical properties of iodine doped poly(methyl methacrylate)

Sheetal Mehta, Jag Mohan Keller and Kallol Das

AIP Conference Proceedings **1731**, 080002 (2016);

<https://doi.org/10.1063/1.4947880>

230 (1991) ✓

229 (1991) ✓


228 (1991) ✓

227 (1991) ✓

SHOW ABSTRACT

226 (1991) ✓

225 (1991) ✓

 No Access . May 2016

Optical properties change in Te diffused $As_{50}Se_{50}$ chalcogenide thin film

Ramakanta Naik, M. Behera, R. Panda and N. C. Mishra

AIP Conference Proceedings **1731**, 080003 (2016);

<https://doi.org/10.1063/1.4947881>

224 (1991) ✓

223 (1991) ✓

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221 (1991) ✓

220 (1991) ✓

SHOW ABSTRACT

219 (1991) ✓

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 No Access . May 2016

Optimization of design

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204 (1990) ✓

203 (1990) ✓


202 (1990) ✓

parameters for bulk micromachined silicon membranes for piezoresistive pressure sensing application

Vinod Belwanshi and Anita Topkar

AIP Conference Proceedings **1731**, 080004 (2016);
<https://doi.org/10.1063/1.4947882>

SHOW ABSTRACT


 No Access . May 2016

Study of cobalt mononitride thin films prepared using DC and high power impulse magnetron sputtering

Rachana Gupta, Nidhi Pandey, Layanta Behera and Mukul Gupta

AIP Conference Proceedings **1731**, 080005 (2016);
<https://doi.org/10.1063/1.4947883>

SHOW ABSTRACT


 No Access . May 2016

Heterojunction between the delafossite TCO n-copper indium oxide and p-Si for solar cell applications



K. Keerthi, T. Masuzawa, B. G. Nair, I. Saito, K. Okano, N. Johns and R. R. Philip

AIP Conference Proceedings **1731**, 080006 (2016);

Loading [MathJax]/jax/output/HTML-CSS/jax.js

201 (1990) <https://doi.org/10.1063/1.4947884>199 (1990) 

SHOW ABSTRACT


200 (1990) 198 (1990)  No Access . May 2016

Simultaneous parameter optimization of x-ray and neutron reflectivity data using genetic algorithms

Surendra Singh and Saibal Basu

AIP Conference Proceedings **1731**, 080007 (2016);<https://doi.org/10.1063/1.4947885>196 (1989) 195 (1989) 194 (1989) 

SHOW ABSTRACT


191 (1989) 193 (1989) 192 (1989)  No Access . May 2016

Collapse of Langmuir monolayer at lower surface pressure: Effect of hydrophobic chain length

Kaushik Das and Sarathi Kundu

AIP Conference Proceedings **1731**, 080008 (2016);<https://doi.org/10.1063/1.4947886>189 (1989) 188 (1989) 186 (1989) 187 (1989) 

SHOW ABSTRACT

190 (1989) 187 (1989) 185 (1989)  No Access . May 2016

Fabrication of broadband

Loading [MathJax]/jax/output/HTML-CSS/jax.js

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167 (1988) ✓

168 (1988) ✓


166 (1988) ✓

quasi-omnidirectional antireflective surface on glass for photovoltaic application

Arvind Kumar, Praveen Kumar, Srinivas G., Jakeer Khan G. H., Siju and Harish C. Barshilia

AIP Conference Proceedings **1731**, 080009 (2016); <https://doi.org/10.1063/1.4947887>

SHOW ABSTRACT

 No Access . May 2016

Synthesis and characterization of nanocomposite polymer blend electrolyte thin films by spin-coating method

Sharanappa Chapi, Niranjana M. and Devendrappa H.

AIP Conference Proceedings **1731**, 080010 (2016); <https://doi.org/10.1063/1.4947888>


SHOW ABSTRACT

 No Access . May 2016


Effective role of deposition duration on the growth of V₂O₅ nanostructured thin films

Rabindar Kumar Sharma, Sujit Kumar Saini, Megha Singh and G. B. Reddy

Loading [MathJax]/jax/output/HTML-CSS/jax.js Conference Proceedings **1731**, 080011 (2016);

165 (1988) <https://doi.org/10.1063/1.4947889>174 (1988) 

SHOW ABSTRACT



164 (1987) 163 (1987)  No Access . May 2016

Thickness dependent band gap of $\text{Bi}_{2-x}\text{Sb}_x\text{Te}_3$ ($x = 0, 0.05, 0.1$) thin films

M. M. Patel, P. H. Soni and C. F. Desai

AIP Conference Proceedings **1731**, 080012 (2016);
<https://doi.org/10.1063/1.4947890>162 (1987) 161 (1987) 160 (1987) 

SHOW ABSTRACT


159 (1987) 158 (1987) 157 (1987)  No Access . May 2016

Solution processed chalcogenide films and micro-patterns via self-assembly

Radhakant Singh, Priyanka Sachan, Prabhat K. Dwivedi and Ashutosh Sharma

AIP Conference Proceedings **1731**, 080013 (2016);
<https://doi.org/10.1063/1.4947891>156 (1987) 155 (1987) 154 (1987) 

SHOW ABSTRACT

153 (1987) 150 (1986) 149 (1986)  No Access . May 2016

Electronic conduction mechanism for

147 (1986) 

Loading [MathJax]/jax/output/HTML-CSS/jax.js

146 (1986) ✓

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137 (1986) ✓

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129 (1985) ✓

NFO/(Pb_{0.80}Sr_{0.20}) TiO₃ bi-layered nanostructure multiferroic composite thin film

Kanchan Bala, Hakikat Sharma and N. S. Negi

AIP Conference Proceedings **1731**, 080014 (2016);<https://doi.org/10.1063/1.4947892>

SHOW ABSTRACT


 No Access . May 2016

Optical and microwave properties of CaBi₄Ti₄O₁₅ ferroelectric thin films deposited by pulsed laser deposition

Sivanagi Reddy Emani, Andrews Joseph and K. C. James Raju

AIP Conference Proceedings **1731**, 080015 (2016);<https://doi.org/10.1063/1.4947893>

SHOW ABSTRACT

 No Access . May 2016

Self-assembly of diblock copolymers at air-water interface: A microscopy and x-ray scattering study


R. P. Giri and M. K. Mukhopadhyay

AIP Conference Proceedings **1731**, 080016 (2016);

Loading [MathJax]/jax/output/HTML-CSS/jax.js

128 (1985) <https://doi.org/10.1063/1.4947894>127 (1985) 

SHOW ABSTRACT


126 (1985) 124 (1985)  No Access . May 2016

Highly reliable spin-coated titanium dioxide dielectric

Sandip Mondal, Arvind Kumar, K. S. R. Koteswara Rao and V. Venkataraman


AIP Conference Proceedings **1731**, 080017 (2016);
<https://doi.org/10.1063/1.4947895>125 (1985) 136 (1985) 132 (1985) 123 (1984) 

SHOW ABSTRACT


122 (1984) 121 (1984)  No Access . May 2016

Effect of PVA concentration on bond modifications in PVA-PMMA blend films

J. Tripathi, S. Tripathi, A. Sharma, R. Bisen and T. Shripathi

AIP Conference Proceedings **1731**, 080018 (2016);
<https://doi.org/10.1063/1.4947896>120 (1984) 118 (1984) 119 (1984) 115 (1984) 117 (1984) 

SHOW ABSTRACT

116 (1984) 113 (1984)  No Access . May 2016

Low doping concentration studies of doped PVA-

114 (1984) 

humarin nanocomposite

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- 112 (1984) ▼
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films

J. Tripathi, S. Tripathi, R. Bisen, A. Sharma, A. Choudhary and T. Shripathi

AIP Conference Proceedings **1731**, 080019 (2016);
<https://doi.org/10.1063/1.4947897>

SHOW ABSTRACT

 No Access . May 2016

Raman spectroscopic investigations of tetragonal to cubic transition in BaTiO₃ films grown on LaAlO₃ substrate

Satish Kumar, Dharendra Kumar, Ajay Kumar Rathore and V. G. Sathe

AIP Conference Proceedings **1731**, 080020 (2016);
<https://doi.org/10.1063/1.4947898>

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

94 (1982) ✓

93 (1982) ✓

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 No Access . May 2016

Attempts to improve the H₂S sensitivity of TiO₂ films

T. C. Jagadale, Nagmani, N. S. Ramgir, C. L. Prajapat, A. K. Debnath, D. K. Aswal and S. K. Gupta

AIP Conference Proceedings **1731**, 080021 (2016);
<https://doi.org/10.1063/1.4947899>

SHOW ABSTRACT


 No Access . May 2016

Structural, morphological, optical and electrical properties of spray deposited lithium doped CdO thin films

P. Velusamy, R. Ramesh Babu and K. Ramamurthi

AIP Conference Proceedings **1731**, 080022 (2016);
<https://doi.org/10.1063/1.4947900>

SHOW ABSTRACT

 No Access . May 2016


Nonlinear optical characterization of graphite oxide thin film by open aperture Z-scan technique

V. G. Sreeja, Ajina Cheruvalathu, R. Reshmi, Sebin Devasia and E. I. Anila

Loading [MathJax]/jax/output/HTML-CSS/jax.js Conference Proceedings **1731**, 080023 (2016);

76 (1981) <https://doi.org/10.1063/1.4947901>75 (1981) 


SHOW ABSTRACT

74 (1981) 73 (1981)  No Access . May 2016**Determination of dispersion parameters of thermally deposited CdTe thin film**

J. M. Dhimmar, H. N. Desai and B. P. Modi

AIP Conference Proceedings **1731**, 080024 (2016);
<https://doi.org/10.1063/1.4947902>72 (1981) 71 (1981) 69 (1981) 70 (1981) 


SHOW ABSTRACT

68 (1981) 67 (1981)  No Access . May 2016**Structural and magnetic studies of Cr doped nickel ferrite thin films**

Kalpana Panwar, N. L. Heda, Shailja Tiwari, Komal Bapna, R. J. Choudhary, D. M. Phase and B. L. Ahuja

AIP Conference Proceedings **1731**, 080025 (2016);
<https://doi.org/10.1063/1.4947903>66 (1981) 65 (1980) 64 (1980) 63 (1980) 62 (1980) 

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61 (1980) 60 (1980) 59 (1980)  No Access . May 2016**Tris octahedral gold monocystal: A promising**

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58 (1980) ✓

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41 (1978) ✓

candidate for the study of plasmonics using cathodoluminescence

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AIP Conference Proceedings **1731**, 080026 (2016); <https://doi.org/10.1063/1.4947904>

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Highly conducting and wide band gap phosphorous doped nc-Si-QD/a-SiC films as *n*-type window layers for solar cells

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 No Access . May 2016

3d-transition metal induced enhancement of molecular hydrogen adsorption on Mg(0001) surface: An *Ab-initio* study

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Loading [MathJax]/jax/output/HTML-CSS/jax.js

- 40 (1978) ▼
- 39 (1978) ▼
- 38 (1977) ▼
- 37 (1977) ▼
- 36 (1977) ▼
- 35 (1976) ▼
- 28 (1976) ▼
- 34 (1976) ▼
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- 30 (1976) ▼
- 29 (1976) ▼
- 27 (1976) ▼
- 23 (1975) ▼
- 26 (1975) ▼
- 25 (1975) ▼
- 24 (1975) ▼

<https://doi.org/10.1063/1.4947906>

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Structural, morphological and optical properties of CeO₂ thin films deposited by RF sputtering

R. Murugan, G. Vijayaprasath, P. Sakthivel, T. Mahalingam and G. Ravi

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 No Access . May 2016

A first principles DFT study of UV-visible absorbing low band gap push-pull polymer

Kalpna Jain, Shyam Kishor, Kh. S. Singh and Lavanya M. Ramaniah

AIP Conference Proceedings **1731**, 080030 (2016); <https://doi.org/10.1063/1.4947908>

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 No Access . May 2016

Loading [MathJax]/jax/output/HTML-CSS/jax.js **Structural and morphological**


- 22 (1974) ∨
- 21 (1974) ∨
- 20 (1974) ∨
- 19 (1974) ∨
- 18 (1974) ∨
- 17 (1974) ∨
- 16 (1974) ∨
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- 9 (1972) ∨
- 8 (1972) ∨
- 7 (1972) ∨
- 6 (1972) ∨
- 5 (1972) ∨

modifications of polymer thin film in the presence of nonsolvent

Hrishikesh Talukdar and Sarathi Kundu

AIP Conference Proceedings **1731**, 080031 (2016);
<https://doi.org/10.1063/1.4947909>

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 No Access . May 2016

ZrO₂-ZnO composite thin films for humidity sensing

M. Velumani, S. R. Meher, L. Balakrishnan, R. Sivacoumar and Z. C. Alex

AIP Conference Proceedings **1731**, 080032 (2016);
<https://doi.org/10.1063/1.4947910>

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 No Access . May 2016

Deposition and characterization of ZnO/NiO thin films


G. Vijayaprasath, P. Sakthivel, R. Murugan, T. Mahalingam and G. Ravi

AIP Conference Proceedings **1731**, 080033 (2016);
<https://doi.org/10.1063/1.4947911>

SHOW ABSTRACT

Loading [MathJax]/jax/output/HTML-CSS/jax.js

- 4 (1972) ∨
- 3 (1972) ∨
- 2 (1971) ∨
- 1 (1970) ∨


 No Access . May 2016

Electrical study of Al/HfO₂/p-Si (100) gate stack

Arvind Kumar, Sandip Mondal and K. S. R. Koteswara Rao

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<https://doi.org/10.1063/1.4947912>

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 No Access . May 2016

Amorphous indium gallium zinc oxide thin film grown by pulse laser deposition technique

Bhaumik V. Mistry and U. S. Joshi

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<https://doi.org/10.1063/1.4947913>

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 No Access . May 2016


Structural and magnetic properties of (111) oriented annealed ultrathin Co/Pt multilayers

A. Sharma, S. Tripathi and J. Tripathi

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<https://doi.org/10.1063/1.4947914>

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 No Access . May 2016

XPS studies of Pt catalysts supported on porous carbon

Deepak Tyagi, Salil Varma and S. R. Bharadwaj

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<https://doi.org/10.1063/1.4947915>

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 No Access . May 2016

Growth and characterization of a-axis oriented Cr-doped AlN films by DC magnetron sputtering

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AIP Conference Proceedings **1731**, 080038 (2016);
<https://doi.org/10.1063/1.4947916>

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 No Access . May 2016

Optical and microwave dielectric properties of pulsed laser deposited $\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3$ thin film


ekam Goud, Sivanagi

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Reddy Emani and K. C. James Raju

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 No Access . May 2016

Spectroscopic studies on diamond like carbon films synthesized by pulsed laser ablation

Madhusmita Panda, R. Krishnan, T. R. Ravindran, Arindam Das, G. Mangamma, S. Dash and A. K. Tyagi

AIP Conference Proceedings **1731**, 080040 (2016);
<https://doi.org/10.1063/1.4947918>

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 No Access . May 2016


Selective growth of ZnO thin film nanostructures: Structure, morphology and tunable optical properties

Katturi Naga Krishnakanth, Desapogu Rajesh and C. S. Sunandana

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<https://doi.org/10.1063/1.4947919>

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 No Access . May 2016

Structural and electronic properties of polar MnO ultrathin film grown on Ag(111)

Asish K. Kundu and Krishnakumar S. R. Menon

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<https://doi.org/10.1063/1.4947920>

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 No Access . May 2016

Multiferroics properties in BiFeO₃/CoFe₂O₄ heterostructures thin films deposited on (111) SrTiO₃

Gulab Singh, Manoj K. Singh, Aditya Kumar, S. Dussan and Ram S. Katiyar

AIP Conference Proceedings **1731**, 080043 (2016);
<https://doi.org/10.1063/1.4947921>

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 No Access . May 2016


Effect of gaseous atmosphere on photoinduced water wetting of ZnO nanowires

Kavita Yadav, B. R. Mehta and J. P. Singh

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<https://doi.org/10.1063/1.4947922>

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SHOW ABSTRACT


 No Access . May 2016

Effect of TiO₂ nano fillers on the electrical conductivity of PSAN/TiO₂ polymer nanocomposites

S. Ningaraju, L. M. Munirathnamma, K. V. Aneesh Kumar and H. B. Ravikumar

AIP Conference Proceedings **1731**, 080045 (2016);
<https://doi.org/10.1063/1.4947923>

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 No Access . May 2016

Structural and magnetic analysis of Cu, Co substituted NiFe₂O₄ thin films


Hakikat Sharma, Kanchan Bala and N. S. Negi

AIP Conference Proceedings **1731**, 080046 (2016);
<https://doi.org/10.1063/1.4947924>

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 No Access . May 2016


Sol-gel derived Al-Ga co-doped transparent conducting oxide ZnO thin films

Loading [MathJax]/jax/output/HTML-CSS/jax.js  No Access . May 2016
S. N. Deep, Shreesha Bhat

and S. M. Dharmaprasath

AIP Conference Proceedings **1731**, 080047 (2016);
<https://doi.org/10.1063/1.4947925>

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 No Access . May 2016

Defect free C-axis oriented zinc oxide (ZnO) films grown at room temperature using RF magnetron sputtering

Saurabh Kunj and K. Sreenivas

AIP Conference Proceedings **1731**, 080048 (2016);
<https://doi.org/10.1063/1.4947926>

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 No Access . May 2016

Spin dependent correlations in a homogeneous electron gas at finite temperature

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AIP Conference Proceedings **1731**, 080049 (2016);
<https://doi.org/10.1063/1.4947927>

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 No Access . May 2016


Loading [MathJax]/jax/output/HTML-CSS/jax.js

Synthesis and characterization of porous structured ZnO thin film for dye sensitized solar cell applications

T. Marimuthu, N. Anandhan, M. Mummoorthi and V. Dharuman

AIP Conference Proceedings **1731**, 080050 (2016);
<https://doi.org/10.1063/1.4947928>

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 No Access . May 2016

Development of high damage threshold multilayer thin film beam combiner for laser application

Mangla Nand, Babita, S. Jena, R. B. Tokas, P. Rajput, C. Mukharjee, S. Thakur, S. N. Jha and N. K. Sahoo

AIP Conference Proceedings **1731**, 080051 (2016);
<https://doi.org/10.1063/1.4947929>

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 No Access . May 2016


Photo current generation in RGO - CdS nanorod thin film device

Koushik Chakraborty, Sankalpita Chakrabarty, Sk. Mujibur Rahman, S. S. Ghosh and S. Jit Ghosh

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AIP Conference Proceedings **1731**, 080052 (2016);
<https://doi.org/10.1063/1.4947930>

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 No Access . May 2016

Investigation of ITO free transparent conducting polymer based electrode

Vikas Sharma, Sapna and Kanupriya Sachdev

AIP Conference Proceedings **1731**, 080053 (2016);
<https://doi.org/10.1063/1.4947931>

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 No Access . May 2016

Growth and properties of crystalline CuInSe_2 thin films by SPD technique

Vipin Shrotriya and P. Rajaram

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<https://doi.org/10.1063/1.4947932>

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 No Access . May 2016


Li doped ZnO thin films for optoelectronic applications

Loading [MathJax]/jax/output/HTML-CSS/jax.js

K. M. Sandeep, Shreesha Bhat, F. J. Serrao and S. M. Dharmaprakash

AIP Conference Proceedings **1731**, 080055 (2016);
<https://doi.org/10.1063/1.4947933>

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 No Access . May 2016

Role of laser energy density on growth of highly oriented topological insulator Bi_2Se_3 thin films

P. Chaturvedi, B. Saha, D. Saha and S. Ganguly

AIP Conference Proceedings **1731**, 080056 (2016);
<https://doi.org/10.1063/1.4947934>

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 No Access . May 2016


Aluminum induced crystallization of amorphous Ge thin films on insulating substrate

Ch. Kishan Singh, T. Tah, D. T. Sunitha, S. R. Polaki, K. K. Madapu, S. Ilango, S. Dash and A. K. Tyagi

AIP Conference Proceedings **1731**, 080057 (2016);
<https://doi.org/10.1063/1.4947935>

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Loading [MathJax]/jax/output/HTML-CSS/jax.js


 No Access . May 2016

Nanostructuring on zinc phthalocyanine thin films for single-junction organic solar cells

Dhirendra K. Chaudhary and Lokendra Kumar

AIP Conference Proceedings **1731**, 080058 (2016);
<https://doi.org/10.1063/1.4947936>

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 No Access . May 2016

Fabrication and characterization of spark plasma sintered Ce:LuAG ceramic for scintillation application

S. Arun Kumar and J. Senthilselvan

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<https://doi.org/10.1063/1.4947937>

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 No Access . May 2016

Magnetic property of electrodeposited nano-crystalline CoFe thin films


A. Soundararaj and J. Mohanty

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Loading [MathJax]/jax/output/HTML-CSS/jax.js

<https://doi.org/10.1063/1.4947938>

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 No Access . May 2016

Variation of local atomic structure due to devitrification of Ni-Zr alloy thin films probed by EXAFS measurements

Debarati Bhattacharya, Nidhi Tiwari, Dibyendu Bhattacharyya, S. N. Jha and S. Basu

AIP Conference Proceedings **1731**, 080061 (2016);
<https://doi.org/10.1063/1.4947939>

SHOW ABSTRACT

 No Access . May 2016

Surface and magnetic characteristics of Ni-Mn-Ga/Si (100) thin film

S. Vinodh Kumar, M. Manivel Raja, R. Senthur Pandi, R. Kodi Pandyan and M. Mahendran

AIP Conference Proceedings **1731**, 080062 (2016);
<https://doi.org/10.1063/1.4947940>

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 No Access . May 2016


Loading [MathJax]/jax/output/HTML-CSS/jax.js

Synthesis and annealing study of RF sputtered ZnO thin film

Shushant Kumar Singh, Himanshu Sharma, R. Singhal, V. V. Siva Kumar and D. K. Avasthi

AIP Conference Proceedings **1731**, 080063 (2016);
<https://doi.org/10.1063/1.4947941>

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 No Access . May 2016

Structural and morphological studies on Bi_{1-x}Ca_xMnO₃ thin films grown by RF magnetron sputtering

K. S. Pugazhvidivu, M. Santhiya, L. Balakrishnan and K. Tamarasan

AIP Conference Proceedings **1731**, 080064 (2016);
<https://doi.org/10.1063/1.4947942>

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 No Access . May 2016


Ag-ZnO nanostructure for ANTA explosive molecule detection

Ummar Pasha Shaik, L. D. Varma Sangani, Anshu Gaur, Md. Ahamad Mohiddon and M. Ghanashyam Krishna

AIP Conference Proceedings **1731**, 080065 (2016);
<https://doi.org/10.1063/1.4947943>

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 No Access . May 2016

Characterization of ion beam sputtered deposited W/Si multilayers by grazing incidence x-ray diffraction and x-ray reflectivity technique

Rajnish Dhawan and Sanjay Rai

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 No Access . May 2016

Kinetics of photo-activated charge carriers in Sn:CdS

Manju Mishra Patidar, Richa Panda, V. R. Gorli,
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 No Access . May 2016

200 MeV Ag¹⁵⁺ ion beam irradiation effects on spray deposited 5 wt% 'Li' doped

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V₂O₅ thin film

M. Kovendhan, D. Paul Joseph, P. Manimuthu, A. Sendilkumar, K. Asokan, C. Venkateswaran and R. Mohan

AIP Conference Proceedings **1731**, 080068 (2016);
<https://doi.org/10.1063/1.4947946>

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Synchrotron radiation- induced contamination on LiF window: Characterization by Raman spectroscopy

P. K. Yadav and M. K. Swami

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Studies on RF sputtered $(\text{WO}_3)_{1-x}(\text{V}_2\text{O}_5)_x$ thin films for smart window applications

M. Meenakshi, R. Sivakumar, P. Perumal and C. Sanjeeviraja

AIP Conference Proceedings **1731**, 080070 (2016);
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 No Access . May 2016

Effect of growth rate on crystallization of HfO_2 thin films deposited by RF magnetron sputtering

M. Dhanunjaya, N. Manikanthababu, A. P. Pathak and S. V. S. Nageswara Rao

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 No Access . May 2016


Tunable surface plasmon resonances in sputtered titanium nitride thin films

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 No Access . May 2016

Synthesis of silver nanowires using hydrothermal technique for flexible transparent electrode application

C. V. Mary Vijila, K. K. Arsina Rahman, N. S. Parvathy and M. K. Jayaraj

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 No Access . May 2016

Effect of hydrodynamic interaction on the free volume distribution of SGFR-PBT composites

L. M. Munirathamma, S. Ningaraju, K. V. Aneesh Kumar and H. B. Ravikumar

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Annealing induced structural changes in amorphous $\text{Co}_{23}\text{Fe}_{60}\text{B}_{17}$ film on Mo buffer layer

Jagrati Dwivedi, Ranjeeta Gupta, Gagan Sharma, Mukul Gupta, Ashutosh Mishra and Ajay Gupta

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 No Access . May 2016

Oxygen partial pressure dependent optical properties of glancing angle deposited (GLAD) Ta_2O_5 films deposited by magnetron sputtering

S. Tripathi, S. Maidul Haque, K. Divakar Rao, J. S. Misal, C. Pratap and N. K. Sahoo

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Effect of RF power on structural and magnetic properties of La doped $\text{Bi}_2\text{Fe}_4\text{O}_9$ thin films

M. Santhiya, K. S. Pugazhvadivu, L. Balakrishnan

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 No Access . May 2016

Effect of sputtering power on MgF₂ thin films deposited by sputtering technique under fluorine trapping

Rajnarayan De, S. Maidul Haque, S. Tripathi, C. Prathap, K. Divakar Rao and N. K. Sahoo

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Fabrication of hetero-junction diode using NiO thin film on ITO/glass substrate

Sonali Soni, Vinay Sharma and Bijoy K. Kuanr

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 No Access . May 2016


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Structural and optical characterization of terbium doped ZnGa₂O₄ thin films deposited by RF magnetron sputtering

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Thermal contact resistance measurement of conduction cooled binary current lead joint block in cryocooler based self field I-V characterization facility

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Ananya Kundu, Subrat Kumar Das, Anees Bano
Pooja Agarwal and **Subrata Pradhan**

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<https://doi.org/10.1063/1.4947960>

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 No Access . May 2016

Investigation on structural, optical and electrical properties of Cp₂Mg flow varied p-GaN grown by MOCVD

S. Surender, S. Pradeep, R. Ramesh and K. Baskar

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Effect of substrate nitridation temperature on the persistent photoconductivity of unintentionally-doped GaN layer grown by PAMBE

Nisha Prakash, B. Choursia, Arun Barvat, Kritika
Anand, S. S. Kushvaha, V. N. Singh, Prabir Pal and
Suraj P. Khanna

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Ultra-high wear resistance of ultra-nanocrystalline diamond film: Correlation with microstructure and morphology

R. Rani, N. Kumar and I-Nan Lin

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 No Access . May 2016


Influence of substrate temperature on the electronic and optical properties of Cr doped TiO₂

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First-principles calculation for phonon and optoelectronic properties of CsSnI₃

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 No Access . May 2016

Structural and electronic properties of TiX (X=N, As) in rock salt and zinc blende phase: A DFT study

U. P. Verma and V. Nayak

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Structural, electronic and elastic properties of REIr₂ (RE=La and Ce) Laves phase compounds

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 No Access . May 2016

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 No Access . May 2016

Exploring the Cr²⁺ doping effect on structural, vibrational and dielectric properties of Mn-Zn ferrites

Pankaj Choudhary, Tarun Tyagi, M. A. Dar and Dinesh Varshney

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<https://doi.org/10.1063/1.4947972>

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 No Access . May 2016

Raman spectroscopic investigation of H₃[Co(CN)₆]: An anharmonicity study


K. K. Mishra, Nilesh P. Salke, S. N. Achary, A. K.

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AIP Conference Proceedings **1731**, 090009 (2016);
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**Synthesis and structural study
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2-ethoxy-5,6,7,8,9,10-
hexahydrocycloocta[B]pyridin
e-3-carbonitrile**

K. Saiadali Fathima, M. Vasumathi and K. Anitha

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Structure and electrical properties of 0.80 Na_{0.5} Bi_{0.5} TiO₃-0.16 K_{0.5} Bi_{0.5} TiO₃-0.04 BaTiO₃ lead-free piezoelectric ceramics

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Anil K. Yadav, Kunjalata Majhi, Abhishek Banerjee, Poonam Devi, R. Ganesan, P. Mishra, H. Lohani, B. R. Sekhar and P. S. Anil Kumar

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Improvement in thermoelectric power factor of mechanically alloyed p-type SiGe by incorporation of TiB₂

Sajid Ahmad, K. Dubey, Shovit Bhattacharya, Ranita Basu, Ranu Bhatt, A. K. Bohra, Ajay Singh, D. K. Aswal and S. K. Gupta

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Thermodynamical properties of ceramic fuel cell


$\text{Ba}_{0.2}\text{Ca}_{0.8}\text{ZrO}_3$

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Semiconductor to metallic type transition in $Ni_{1.5}Fe_{1.5}O_4$ ferrite

Aneeshkumar K. S. and R. N. Bhowmik

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Multicomponent diffusion in molten salt NaF-ZrF₄: Dynamical correlations and Maxwell–Stefan diffusivities

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S. P. Tewari, P. Silotia, G. Dhingra, P. Tandon and J. Sood

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Optical properties of Eu(III) doped strontium gadolinium niobate oxide

Verma Vishwnath, M. Srinivas, Nimesh Patel, Dhaval Modi and K. V. R. Murthy

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Investigation of conduction mechanism in $\text{Pr}_{0.67}\text{Sr}_{0.13}\text{Ag}_{0.20}\text{MnO}_3$ manganites

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Electron transport property of tetrathiafulvalene molecule

Rajkumar Mondal, Barnali Bhattacharya, Jyotirmoy Deb and Utpal Sarkar

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Conductivity enhancement in mechanosynthesized Bi_2O_3

S. Bandyopadhyay, Sk. Anirban, A. Sinha, S. K. Pradhan and A. Dutta

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**$\text{Nd}_{2\pm x}\text{Zr}_{2\mp x}\text{O}_{7\pm x/2}$
($-0.2 \leq x \leq 0.4$) complex oxides:
Effect of anion disorder on
ionic conductivity**

P. Anithakumari, V. Grover and A. K. Tyagi

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**Thermoelectric properties of
 $\text{CuS}/\text{Ag}_2\text{S}$ nanocomposites
synthesised by modified polyol
method**

Tarachand, Vikash Sharma, V. Ganesan and
Gunadhor S. Okram

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**Grain size effect on activation
energy in spinel CoFe_2O_4
ceramic**

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Characterization of co-doped (In, N): ZnO by indigenous thermopower measurement system

Sanjay Kumar Kedia, Anil Singh and Sujeet
Chaudhary

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Enhanced proton conductivity by the influence of modified montmorillonite on poly (vinyl alcohol) based blend composite membranes

P. Bahavan Palani, K. Sainul Abidin, R. Kannan, S. Rajashabala and M. Sivakumar

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Conduction phenomenon of Al^{3+} modified lead free $(\text{Na}_{0.5}\text{Bi}_{0.5})_{0.92}\text{Ba}_{0.08}\text{TiO}_3$ electroceramics

Hitesh Borkar and Ashok Kumar

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Temperature dependent electrical properties of polyaniline film grown on paper through aniline vapor polymerization

K. Deb, K. L. Bhowmik, A. Bera, K. K. Chattopadhyay and B. Saha

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Structural and thermoelectric property study of Se doped Sb_2Te_3 alloy

Diptasikha Das, K. Malik, A. K. Deb, A. Dasgupta, S. Bandyopadhyay, V. A. Kulbashinskii and Aritra Banerjee

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Thermoelectric property study of Bi_2Te_3 - Sb_2Te_3 mixed crystals

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Bandyopadhyay and Aritra Banerjee

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Numerical investigations on hot-zone modified DS furnace for mc-Si growth process

S. Sanmugavel, M. Srinivasan, K. Aravinth and P. Ramasamy

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Improved electrical properties of free standing blend polymer for renewable energy resources

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Enhanced dielectric, impedance and magnetic characteristics of Co doped multiferroic $\text{Bi}_2\text{Fe}_4\text{O}_9$

S. R. Mohapatra, B. Sahu, S. D. Kaushik and A. K. Singh

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Electrical transport properties and current density - voltage characteristic of PVA-Ag nanocomposite film

A. K. Das, B. Dutta, S. Sinha, A. Mukherjee, S. Basu and A. K. Meikap

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Structural and electrochemical properties of PEMA with the influence of MWCNT / TiO_2 filler

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Computation modelling on von Mises stress in multi-crystalline silicon ingot for PV application

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Dislocation density analyses of multi-crystalline silicon during the directional solidification process with bottom grooved furnace

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Dielectric and AC conductivity studies of Nd substituted $0.8\text{BaTiO}_3-0.2(\text{Bi}_{0.5(1-x)}\text{Nd}_{0.5x}\text{K}_{0.5})\text{TiO}_3$ lead free ceramics

M. N. V. Ramesh and K. V. Ramesh

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Gupta

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Size dependent polaronic conduction in hematite

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M. Goswami, A. Mukherjee, R. Ghosh and A. K. Meikap

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Structural and electrical properties of electric field assisted spray deposited pea structured ZnO film

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**Synthesis and
characterizations of
(In_{0.90}Sn_{0.05}Ni_{0.05})₂O₃
nanoparticles using solid state
reaction method**

S. Harinath Babu, N. Sai Krishna, S. Kaleemulla, N.
Madhusudhana Rao, M. Kuppan, C.
Krishnamoorthi, Girish M. Joshi and G. A. Basheed

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Hydrothermal growth and conductivity enhancement of (Al, Cu) co-doped ZnO nanorods thin films

Mohua Chakraborty, Preetilata Mahapatra and R. Thangavel

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Structural and electrical properties of T'-type Ln_2CuO_4 (Ln = Pr, Nd, Sm, Eu and Gd) ceramics

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A novel technique to measure interface trap density in a GaAs MOS capacitor using time-varying magnetic fields

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A. V. Prajapati, Y. A. Sonvane, H. P. Patel and P. B. Thakor

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Investigations of electrical and optical properties of low energy ion irradiated α -Fe₂O₃ (hematite) thin films

Indra Sulania, Jyoti Kaswan, Vinesh Attatappa, Ranjeet Kumar Karn, D. C. Agarwal and D. Kanjilal

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Synthesis of bismuth tungstate (Bi_2WO_6) nanoflakes and their field emission investigation

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Neutron diffraction, specific heat and magnetization studies on $\text{Nd}_2\text{CuTiO}_6$


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Structural, optical and magnetic properties of $(\text{In}_{0.90}\text{Sn}_{0.05}\text{Cu}_{0.05})_2\text{O}_3$ nanoparticles

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A first principles study of half-metallic ferromagnetism in $\text{In}_{1-x}\text{Ti}_x\text{P}$ ($x = 0.06$) diluted magnetic semiconductor

Hardev S. Saini, Mukhtiyar Singh, Jyoti Thakur, G. S. S. Saini and Manish K. Kashyap

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Adiabatic demagnetization of the antiferromagnetic spin-1/2 Heisenberg hexagonal cluster

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Magnetic properties of CuCr_2Se_4 and $\text{CuCr}_{1.5}\text{Ti}_{0.5}\text{Se}_4$

P. Suchismita Behera, P. A. Bhoje and A. K. Nigam

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Oxygen vacancy induced magnetism in $(\text{Th}_{0.9}\text{Bi}_{0.1})\text{O}_{1.95}$ solid solution

Buddhadev Kanrar, Nimai Pathak, C. L. Prajapat, P. K. Mishra, R. M. Kadam, N. L. Misra and G. Ravikumar

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Synthesis and magnetic study of carbon coated iron oxide nanoparticles by laser ablation in solution

C. L. Prajapat, P. Sharma, M. R. Gonal, R. K. Vatsa, M. R. Singh and G. Ravikumar

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Preparation and characterization of YBCO


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substrates by pulsed laser deposition

M. R. Gonal, C. L. Prajapat, P. S. Igalwar, B. C. Maji,
M. R. Singh and M. Krishnan

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Paramagnetic response and novel metastability effects in a single crystal of superconducting $\text{Ca}_3\text{Ir}_4\text{Sn}_{13}$

Santosh Kumar, Ravi P. Singh, A. Thamizhavel, C. V. Tomy and A. K. Grover

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Mössbauer and Kerr microscopy investigation of crystallization in FeCoB ribbons

V. Raghavendra Reddy, Zaineb Hussain, Hari Babu, Namrata Shrivastava and Ajay Gupta

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Magnetic properties of FeZr₂ and Fe₂Zr intermetallic compounds

C. L. Prajapat, D. Chattaraj, R. Mishra, M. R. Singh,
P. K. Mishra and G. Ravikumar

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Effect of synthesis conditions on the photocatalytic property of multiferroic BiFeO₃ towards the degradation of phenol red

Radhalayam Dhanalakshmi, M. Muneeswaran and
N. V. Giridharan

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Effect of boron on the structural and magnetic


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properties of $\text{Co}_2\text{FeSi}_{1-x}\text{B}_x$ Heusler alloys

M. Ramudu, M. Manivel Raja and S. V. Kamat

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Thermally induced perpendicular magnetic anisotropy in CoFeB/MgO $/\text{CoFeB}$ based magnetic tunnel junction

Prabhanjan D. Kulkarni, Jakeer Khan, P. Predeep
and P. Chowdhury

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Effect of air annealing on structure and magnetic properties of $\text{Sn}_{1-x}\text{Fe}_x\text{O}_2$ thin films


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S. Kaleemulla, N. Madhusudhana Rao and C.
Krishnamoorthi

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Optical and magnetic properties of Co^{2+} substituted NiFe_2O_4 nanoparticles

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Magnetic properties of delafossite oxide: $\text{CuCr}_{1-x}\text{Ti}_x\text{O}_2$

M. K. Mishra, P. A. B. P. S. A. K. Nigam

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Raman spectra and structural properties of hexagonal $\text{Yb}_{1-x}\text{Dy}_x\text{MnO}_3$ ($x = 0, 0.05$ and 0.1)

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Magnetic structure of $\text{Co}(\text{Cr}_{0.925}\text{Fe}_{0.075})_2\text{O}_4$

Ram Kumar, R. Padam, Sudhindra Rayaprol,
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Kinetic arrest of field- temperature induced first order phase transition in quasi-one dimensional spin system $\text{Ca}_3\text{Co}_2\text{O}_6$

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Chaddah

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Band-gap tuning and magnetic properties of heterovalent ions (Ba, Sr and Ca) substituted BiFeO_3 nanoparticles

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Room temperature ferromagnetism and luminescent behavior of Ni doped ZnO nanoparticles prepared by coprecipitation method

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magnetoelectric trirutile Fe_2TeO_6

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Comparison of structural and magnetic properties of $\text{Zn}_x\text{Mg}_{1.5-x}\text{Mn}_{0.5}\text{FeO}_4$ and $\text{MgAl}_x\text{Cr}_x\text{Fe}_{2-2x}\text{O}_4$ spinel oxides

K. P. Thummer, A. R. Tanna and H. H. Joshi

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Studying dielectric mechanism and magnetization of double perovskite $\text{Gd}_2\text{NiMnO}_6$ ceramic


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Magnetic and transport properties of nanocrystalline double perovskite $\text{Sm}_2\text{CoMnO}_6$

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Magnetism in $\text{La}_{0.7}\text{Sr}_{0.3}\text{Mn}_{1-x}\text{Co}_x\text{O}_3$ ($0 \leq x \leq 1$)

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Study of magneto-optic effect on $\text{Mn}_{1-x}\text{Zn}_x\text{Fe}_2\text{O}_4$ nanoferrofluids

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Electronic and magnetic properties in $\text{Sr}_{1-x}\text{La}_x\text{RuO}_3$

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Magnetic properties of CoFe_2O_4 and ZnFe_2O_4 nanoparticles synthesized by novel chemical route

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Signature of Griffith phase in $(\text{Tb}_{1-x}\text{Ce}_x)\text{MnO}_3$

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PVA/ $\text{K}_2\text{Ti}_6\text{O}_{13}$ synthetic composite for dielectric applications

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Kavita Kaswan, Ashish Agarwal, Sujata Sanghi, Manisha Rangi, Sandhaya Jangra and Ompal Singh

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Structural, dielectric and magnetic properties of $\text{Bi}_{0.8}\text{Ba}_{0.2}\text{Fe}_{0.6}\text{Mn}_{0.4}\text{O}_3$ ceramic

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Characteristic length scale dependence on conductivity for La_{2-x}Er_xMo₂O₉ (0.05 ≤ x ≤ 0.3) oxide ion conductors

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Raman and FT-IR studies of (In_{0.90}Sn_{0.05}Fe_{0.05})₂O₃ nanoparticles

S. Harinath Babu, N. Sai Krishna, S. Kaleemulla, N. Madhusudhana Rao, C. Krishnamoorthi, Girish M. Joshi, I. Omkaram and D. Sreekantha Reddy

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Rietveld refined structural and room temperature vibrational properties of BaTiO₃ doped La_{0.67}Ba_{0.33}MnO₃ composites

M. A. Dar, M. W. Sheikh, M. S. Malla and Dinesh Varshney

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Structural and dielectric properties of La and Ni-doped M -type $\text{BaFe}_{12}\text{O}_{19}$ ceramics

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Substitution effects on nonlinear optical activity of (X-methylphenyl)-5-nitro-6-amino-3-pyridinecarboximide (X=2,3,4,5,6): A DFT approach


S. Premkumar, R. Mohamed Asath, T. N. Rekha, A. Jawahar, T. Mathavan and A. Milton Franklin Benial

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Efficient radical cation stabilization of PANI-ZnO and PANI-ZnO-GO composites and its optical activity

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Specific heat of new perovskite-type cobaltates $\text{Pr}_{1-x}\text{Nd}_x\text{CoO}_3$

Rasna Thakur, Archana Srivastava, Rajesh K. Thakur and N. K. Gaur

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Study of glassy behavior in $60(\text{Na}_{0.5}\text{Bi}_{0.5})\text{TiO}_3$ -40SrTiO₃ lead-free relaxor


S. Praharaj, D. Rout, B. B. Kar and V. Subramanian

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Structural and electrical properties of ferroelectric $\text{Na}_{0.5}(\text{Bi}_{1-x}\text{Pr}_x)_{0.5}\text{TiO}_3$ ($x=0.00$ and 0.10) ceramics synthesized by Sol-Gel method

K. Shalini, M. Muneeswaran and N. V. Giridharan

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Enhancing the photovoltaic performance of CdTe/CdS solar cell via luminescent downshifting using $\text{K}_2\text{SiF}_6:\text{Mn}^{4+}$ phosphors

R. A. Talewar, C. P. Joshi and S. V. Moharil

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Lithium substitution in strontium chlorapatite studied by solid state NMR spectroscopy

S. Subramanian, B. K. Maji, H. Jena, T. N. Sairam and G. Amarendra

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Room temperature neutron diffraction and magnetic studies of multiferroic $\text{Pb}_{0.9}\text{Bi}_{0.1}\text{Fe}_{0.55}\text{Nb}_{0.45}\text{O}_3$ solid solution

S. T. Dadami, S. Matteppanavar, Shivaraja I., S. Rayaprol, S. K. Deshpande and B. Angadi

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A. Divya, T. Mathavan, R. Mohamed Asath, J. Archana, Y. Hayakawa and A. Milton Franklin Benial

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Vibrational spectroscopic, structural and nonlinear optical activity studies on 2-amino-3-chloro-5-trifluoromethyl pyridine: A DFT approach

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Lead titanate/cyclic carbonate dependence on ionic conductivity of ferro/acrylate blend polymer composites

R. Jayaraman, P. Vickraman, N. M. V. Subramanian and A. Simon Justin

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Partha S. Ghosh, Karamvir Kaur, K. Ali, A. Arya and G. K. Dey

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Investigation of multiferroic behavior on flakes-like BiFeO_3

Javed R. Sheikh, Vishwajit M. Gaikwad and Smita A. Acharya

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Ab-initio study of oxygen defects in pure ThO_2

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Synthesis and characterization of polycrystalline brownmillerite cobalt doped $\text{Ca}_2\text{Fe}_2\text{O}_5$

Suchita Dhankhar, Gopal Bhalerao, K. Baskar and Shubra Singh

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AIP Conference Proceedings **1731**, 140032 (2016);
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Enhanced luminescence in Mg^{2+} codoped $\text{CaTiO}_3:\text{Eu}^{3+}$ phosphor prepared by solid state reaction

C. Sai Vandana and B. Hemalatha Rudramadevi

AIP Conference Proceedings **1731**, 140033 (2016);
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Carbon derived from *Dosmostachya bipinnata* (Dharba grass): A novel material for supercapacitors

N. Maheswari, S. Nagamuthu, V. Savithiri and G.
Muralidharan

AIP Conference Proceedings **1731**, 140034 (2016);
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Plasmonic characterization of photo-induced silver nanoparticles extracted from silver halide based TEM film

Sudheer, P. Tiwari, G. K. Varshney, V. N. Rai and A. K. Srivastava

AIP Conference Proceedings **1731**, 140035 (2016);
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Evolution of magnetism in Ru doped Na_2IrO_3

Kavita Mehlawat and Yogesh Singh

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Structural and magnetic properties of Prussian blue analogue molecular magnet $\text{Fe}_{1.5}[\text{Cr}(\text{CN})_6] \cdot m\text{H}_2\text{O}$

Pramod Bhatt, S. S. Meena, M. D. Mukadam and S. M. Yusuf

AIP Conference Proceedings **1731**, 140037 (2016);
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Temperature controlled junction behavior of polyaniline/ZnO heterostructures

Mansi Dhingra, Sadhna Shrivastava, K. Asokan and
S. Annapoorni

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Preparation and characterization of chitosan - polystyrene polymer blends

N. P. Mascarenhas, R. A. Gonsalves, J. J. Goveas, T.
C. S. Shetty and V. Crasta

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Crystal structure and cation exchanging properties of a novel open framework


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phosphate of Ce (IV)

Samatha Bevara, S. N. Achary, S. J. Patwe, A. K. Sinha, R. K. Mishra, Amar Kumar, C. P. Kaushik and A. K. Tyagi

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Optical and electronic properties of double perovskite $\text{Ba}_2\text{ScSbO}_6$

Rajyavardhan Ray, A. K. Himanshu, J. Lahiri, Uday Kumar, Pintu Sen, S. K. Bandyopadhyay and T. P. Sinha

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Structural and light up-conversion luminescence properties of Er^{3+} - Yb^{3+} - W^{6+} substituted $\text{Bi}_4\text{Ti}_3\text{O}_{12}$

Renuka Bokolia, Vineet K. Rai, Lalita Chauhan and K. Sreenivas

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**Microstructural changes in
NiFe₂O₄ ceramics prepared
with powders derived from
different fuels in sol-gel auto-
combustion technique**

Lalita Chauhan, Renuka Bokolia and K. Sreenivas

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**Impedance studies of a green
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based on PVA and Aloe-vera**

S. Selvalakshmi, T. Mathavan, N. Vijaya,
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**Interactions of gas molecules
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Munish Sharma, Pooja Jamdagni, Ashok Kumar
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Empirical model studies on relaxor behaviour in Bi_{2.5}La_{1.5}Ti₃O₁₂ ceramic

Rachna Selvamani, Adityanarayan Pandey and S.
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Field induced polarization and magnetization behaviour of Gd-doped lead magnesium niobate ceramics

Adityanarayan Pandey, Surya Mohan Gupta and Arun Kumar Nigam

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Topological insulator behavior of WS₂ monolayer with square-octagon ring structure

Ashok Kumar, Ravindra Pandey, P. K. Ahluwalia and K. Tankeshwar

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Vibrational spectroscopic, structural and nonlinear optical activity studies on 6-aminonicotinamide: A DFT approach

Loading [MathJax]/jax/output/HTML-CSS/jax.js Kumar, T. N. Rekha, A.

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Structural studies on doped MnTiO_3

R. K. Maurya and R. Bindu

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Raman effect, structural and dielectric properties of sol-gel synthesized polycrystalline $\text{GaFe}_{1-x}\text{Zr}_x\text{O}_3$ ($0 \leq x \leq 0.15$)

Rajeev Kumar, Ashish Kumar Mall and Rajeev
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Structural, optical, dielectric and magnetic investigation on mixed valance $\text{Pb}_3\text{Mn}_7\text{O}_{15}$

B. Sahu, S. R. Mohapatra, M. S. Pattanaik, S. Raut,
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Asha, Sneh Lata Goyal and Nawal Kishore

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Effect of different sulphur precursors on morphology and band-gap on the formation of $\text{Cu}_2\text{ZnSnS}_4$ (CZTS) particles with microwave irradiation


Bharati Patro, S. Vijaylakshmi and Pratibha Sharma

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High temperature magneto-electric effect in yttrium iron garnet (YIG)

J. Saha, S. Chaudhary, P. Majumdar, B. K. Kuanr and S. Patnaik

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Pulsed laser deposited MnCo₂O₄ protective layer on SS430 for solid oxide fuel cell application

Anshu Gaur, Md. Ahamad Mohiddon and Muvva D. Prasad

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**excess on multiferroic
properties of (Na_{0.5}Bi_{0.5})
0.99La_{0.01}Ti_{0.988} Fe_{0.012}O₃ lead
free system**

Kusum Parmar, Hakikat Sharma, R. K. Kotnala and
N. S. Negi

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**Effect of Ce concentration on
luminescence properties of
Gd₃Ga₃Al₂O₁₂:Ce nanocrystals**

K. V. Singh, J. P. Singh, S. Shinde, A. K. Singh and
M. Tyagi

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**Effect of samarium and iron
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BaZr_{0.05}Ti_{0.95}O₃ ceramics**


Randeep Kaur, Anumeet Kaur, Anupinder Singh,
Mandeep Singh and Lakhwant Singh

AIP Conference Proceedings **1731**, 140060 (2016);

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Effect of Zr^{4+} substitution on ferroelectric and dielectric properties of $BaTiO_3$ ceramics

S. K. Gaikwad, V. G. Chodekar, O. A. Ramdasi, S. P. Kharat, S. G. Kakade, R. C. Kambale and Y. D. Kolekar

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Structural, magnetic and thermal study of Cr doped iron-tungsten-oxygen system (Fe_2WO_6)

Archana Kumari, C. Dhana Sekhar and A. K. Das

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Weyl semimetal NbP

P. Kumar, Sudesh and S. Patnaik

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Synthesis, structure and photoluminescence properties of Sm³⁺-doped BiOBr phosphor

Pramod Halappa, C. Shivakumara, Rohit Saraf and H. Nagabhushana

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Mössbauer spectroscopic studies in U-Fe and U-Fe-Zr alloys

Alaka Panda, L. Herojit Singh, S. Rajagopalan, R. Govindaraj, Renjith Ramachandran, S. Kalavathi and G. Amarendra

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Improved ferroelectric, piezoelectric and electrostrictive properties of dense BaTiO₃ ceramic

Bharat G. Baraskar, S. G. Kakade, A. R. James, R. C. Kambale and Y. D. Kolekar

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FT-IR and Zeta potential measurements on TiO nanoparticles

Jaiveer Singh, Ravi Rathore, Netram Kaurav and G. S. Okram

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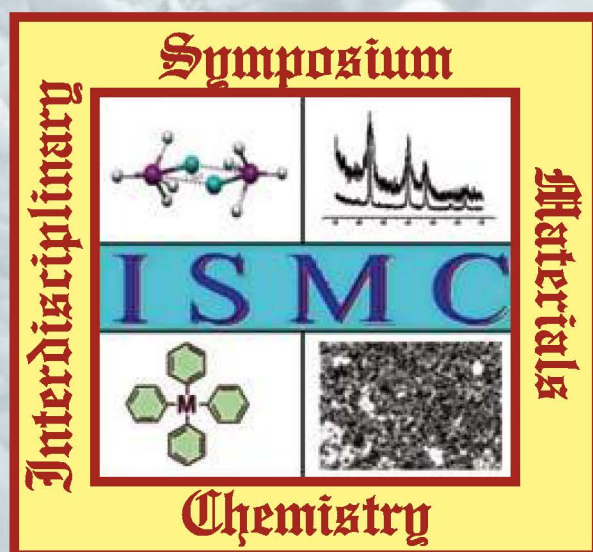
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6th Interdisciplinary Symposium on Materials Chemistry



December 06 - 10, 2016
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Proceedings of
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Preface

This symposium is the 6th of the ISMC series of biennial symposia now completing a decade of its journey of hosting international symposia on materials chemistry. This symposium was renamed 'Interdisciplinary Symposium on Materials Chemistry' (ISMC) in 2012 from erstwhile 'International Symposium on Materials Chemistry' (ISMC) each highlighting interdisciplinary nature of the symposia and were held in December 2006, 2008, 2010, 2012 and 2014. This series of symposia are jointly organized by Chemistry Division, BARC and Society for Materials Chemistry (SMC).

The legacy and rich traditions of ISMC are reflected in the 6th Interdisciplinary Symposium on Materials Chemistry (ISMC-2016) being held during 6-10 December 2016. There is growing demand of new materials in different fields like nuclear industry, electronics, space programs, chemical industry and health sector, etc. The 6th ISMC will focus various areas of materials science such as nuclear materials, high purity materials, nanomaterials and clusters, carbon based materials, fuel cell materials, biomaterials, polymers and soft condensed matter, materials for energy conversion, thin film and surface chemistry, magnetic materials, catalysis, chemical sensors, organic and organometallic compounds, computational materials chemistry. The ISMC will provide a common platform to scientists to share their views and ideas and evolve new programs. There has been an overwhelming response for 6th ISMC from materials chemistry community from India and overseas.

The *Society for Materials Chemistry* (SMC) was registered in 2007 with Chemistry Division, BARC as its head quarter. The SMC continues to grow in stature since its inception in 2007. The number of life-members has increased considerably from about 50 in 2007 to around 1000 now. Besides ISMCs, Society also organizes national workshops every odd year and special lectures by eminent scientists. Society also publishes three issues of SMC Bulletins per year and can be found on the website www.smc-india.org

For an event of this kind, the Symposium Organizing Committee received help, support and encouragement from different quarters and we acknowledge all of them. We sincerely thank BARC authorities for giving consent to organize the 6th ISMC 2016, National Advisory Committee for valuable suggestions, Session chairpersons, invited speakers, reviewers for assessment of abstracts. We are grateful to all the convenors, co-convenors and members of the sub-committees of the 6th ISMC for their painstaking efforts. We acknowledge sustained support and cooperation extended by scientific technical/ non-technical staff of Chemistry Division in organizing the 6th ISMC-2016. We thank all the invited speakers, faculty members, research scholars and students for their participation in this Symposium. The Symposium Organizing Committee is grateful to Board of Research in Nuclear Sciences (BRNS) for financial assistance. We wish all the participants a very pleasant stay in Mumbai and scientifically rewarding experience.

Convenor
Symposium Organizing Committee

EDITORIAL

It is indeed a great pleasure and satisfaction for the Editors to present the proceedings containing abstracts of the Invited talks, Short lectures and Contributory articles for the DAE-BRNS 6th Interdisciplinary Symposium on Materials Chemistry (ISMC-2016). This biennial symposium has covered almost all the contemporary research areas of materials chemistry, such as, materials for energy conversion, biomaterials, carbon based materials, polymers and soft condensed matter, thin films and surface chemistry, organic and organometallics, magnetic materials, high purity materials and hybrid materials while topics like nuclear materials, nanomaterials and clusters, catalysis, chemical sensors, fuel cell materials and computational research in materials, remained an important facet of the symposium. Several eminent scientists from India and abroad have accepted our invitation to share their proficiency with the participants of ISMC-2016. We thank all invited and short lecture speakers for timely submission of the abstracts.

The overwhelming response towards contributory abstracts from various universities and research institutions throughout the country has been really heartening though it has made the reviewing process a bit more laborious. We place on record our sincere thanks to all the reviewers drawn from the scientific community in BARC for their dedicated efforts in evaluating the large number of abstracts in timely manner. Total 370 abstracts were received and reviewed. After reviewing all the manuscripts 330 abstracts were accepted. Among accepted papers 272 abstracts from the registered participants is included in the abstract book and proceedings. The peer reviewed abstracts have been suitably organized under fifteen categories reflecting the depth and scope of respective research areas. During compilation of the proceedings, the editorial team took the liberty to edit some of the abstracts mainly to keep uniformity in the formatting. While doing so, utmost care was taken to retain all the scientific content intact as provided by the authors.

We are extremely grateful to all the members of National Advisory Committee, ISMC-2016 for their valuable guidance and support in formulating and shaping the conference. The guidance, support and encouragement received from Dr. B. N. Jagatap, Director, Chemistry Group and Chairman, Symposium Organizing Committee, ISMC-2016 and other members of Symposium Organizing Committee during the entire process of publication of this volume has been really gratifying and are sincerely acknowledged.

The financial support from Board of Research in Nuclear Sciences (BRNS) has been instrumental in the publication of this volume and we gratefully acknowledge the same.

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Preface: 62nd DAE Solid State Physics Symposium

The 62nd DAE Solid State Physics Symposium was held in DAE Convention Centre Anushaktinagar, Mumbai, India during December 26 – 30, 2017. The symposium is sponsored by the Board of Research in Nuclear Sciences (BRNS), Department of Atomic Energy (DAE) and organized by Bhabha Atomic Research Centre (BARC), Mumbai. It is held annually at different venues in the country with a broad aim to bring together researchers working in various aspects of Condensed Matter Physics. There were about 1000 registered participants coming from various Universities and institutes in India and abroad in this symposium. The technical session was divided into invited talks, contributory papers in the form of oral and poster presentations, presentations by Ph.D. thesis candidates and Young Achiever Award nominees. We had received 1402 contributory papers from which 840 papers were chosen for presentation after a due review process by experts. In the concluding session 24 best poster awards, 3 Young Achiever Awards (YAA) and 3 best Ph.D. thesis awards were given.

Two outstanding plenary talks were delivered on *Organic-inorganic hybrid ferroelectric perovskite materials for photovoltaic applications: The role of the polar field and other related issues* by Prof. D. D. Sarma, Indian Institute of Science, Bangalore, and *Discovery of superconductivity of very pure single crystal of Bismuth* by Prof. S. Ramakrishnan, Tata Institute of Fundamental Research, Mumbai. The evening talks were delivered by Prof. G. K. Dey, Former Director, Material Group, BARC, Mumbai on Viewing biological and non-biological matter through the Transmission Electron Microscope and by Prof. S. P. Kale, Former Associate Director, Bioscience Group, BARC on Enviro - Economics of Our Life.

In this symposium, 2 plenary talks, 49 invited talks, 24 oral presentations, and 800 posters were presented. The topics covered in the symposium were (a) Phase transitions (b) Soft Condensed Matter including Biological Systems (c) Nano-materials (d) Experimental Techniques and Devices (e) Glasses and Amorphous Systems (f) Surfaces, Interfaces and Thin Films (g) Electronic Structures and Phonons (h) Single Crystals Growth and Characterization (I) Transport Properties (J) Semiconductor Physics (K) Superconductivity, Magnetism and Spintronics (l) Energy Materials. There were 8 thematic seminars on (i) Energy Materials (ii) Superconductivity (iii) Applied Physics (iv) Nanomaterials (v) Condensed Matter-Theory (vi) Science using Neutron and Synchrotron facilities (vii) Functional / Nanomaterials (viii) Soft Condensed Matter.

We thank the Chairman, Atomic Energy Commission, Director, Bhabha Atomic Research Centre, Mumbai, members of the Advisory Committee and the Organizing Committee of 62nd DAE Solid State Physics Symposium for their valuable suggestions and guidance in the organization of the symposium. We thank Dr. Dibyendu Bhattacharyya, Chairman, Local Organizing Committee and its members for their untiring efforts in successfully organizing the event. We thank the manuscript reviewers, members of the YAA and Ph.D. thesis evaluation committee, Poster reviewers for giving their valuable time and effort in selection of the manuscripts and award winners under various categories.

Surendra Singh, Arup Biswas, Amitabh Das
(Guest Editors)

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Asim Debnath, Debarghya Goswami and Pradip Kumar Mandal

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CONTRIBUTED PAPERS A. Phase Transitions


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2043 (2018) ✓

Study of bulk Hafnium oxide (HfO₂) under compression

2044 (2018) ✓

Santanu Pathak, Guruprasad Mandal and Parnika Das

2037 (2018) ✓


AIP Conference Proceedings **1942**, 030027 (2018);
<https://doi.org/10.1063/1.5028608>

2041 (2018) ✓

SHOW ABSTRACT

2038 (2018) ✓

2035 (2018) ✓

 No Access . April 2018

2036 (2018) ✓

Vortices in a rotating dipolar Bose-Einstein condensate

2030 (2018) ✓

2042 (2018) ✓

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2022 (2018) ✓

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2021 (2018) ✓

2019 (2018) ✓

2020 (2018) ✓

2013 (2018) ✓

2017 (2018) ✓

with two- and three-body interactions

S. Sabari

AIP Conference Proceedings **1942**, 030028 (2018);
<https://doi.org/10.1063/1.5028609>

SHOW ABSTRACT

CONTRIBUTED PAPERS B. Soft Condensed Matter Including Biological Systems


 No Access . April 2018

First passage Brownian functional properties of snowmelt dynamics

Ashutosh Dubey and Malay Bandyopadhyay

AIP Conference Proceedings **1942**, 040001 (2018);
<https://doi.org/10.1063/1.5028610>

SHOW ABSTRACT

 No Access . April 2018

Characterization and microstructure of HPMC/Gly:AgNO₃ polymer composites

H. T. Ananda, G. Thejas Urs and R. Somashekar

AIP Conference Proceedings **1942**, 040002 (2018);

2018 (2018) ✓


<https://doi.org/10.1063/1.5028611>

2016 (2018) ✓

SHOW ABSTRACT

2015 (2018) ✓

2014 (2018) ✓

 No Access . April 2018

Inter-particle interaction dependent evaporation-induced assembly in contact-free micro-colloidal droplets

Debasis Sen, Priyanka Biswas and J. S. Melo

AIP Conference Proceedings **1942**, 040003 (2018);
<https://doi.org/10.1063/1.5028612>

2011 (2018) ✓

2012 (2018) ✓

2010 (2018) ✓


2008 (2018) ✓

2009 (2018) ✓

SHOW ABSTRACT

2007 (2018) ✓

2006 (2018) ✓

 No Access . April 2018

Scaling in the different relaxation modes of ferroelectric liquid crystal systems

Amrita Mukherjee and Surjya Sarathi
BhattacharyyaAIP Conference Proceedings **1942**, 040004 (2018);
<https://doi.org/10.1063/1.5028613>

2004 (2018) ✓

2005 (2018) ✓

2001 (2018) ✓

2002 (2018) ✓

1999 (2018) ✓

SHOW ABSTRACT

2003 (2018) ✓

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 No Access . April 2018


- 1997 (2018) ✓
- 1998 (2018) ✓
- 1992 (2018) ✓
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- 1989 (2018) ✓
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- 1988 (2018) ✓
- 1987 (2018) ✓
- 1985 (2018) ✓
- 1983 (2018) ✓
- 1980 (2018) ✓

Fabrication of patterned surface by soft lithographic technique for confinement of lipid bilayer

Ranjita Ghosh Moulick and Dirk Mayer

AIP Conference Proceedings **1942**, 040005 (2018);
<https://doi.org/10.1063/1.5028614>

SHOW ABSTRACT


 No Access . April 2018

Salts of diisopropylammonium – A non-toxic alternate to perovskite ferroelectrics

Ekramul Kabir, M. Khatun, T. Ghosh, Mustafa J. Raihan and M. Rahman

AIP Conference Proceedings **1942**, 040006 (2018);
<https://doi.org/10.1063/1.5028615>


SHOW ABSTRACT

 No Access . April 2018


















Conductivity study of thermally stabilized RuO₂/polythiophene nanocomposites

Vidyashree Hebbar and R. F. Bhajantri

AIP Conference Proceedings **1942**, 040007 (2018);
<https://doi.org/10.1063/1.5028616>

1981 (2018) 

SHOW ABSTRACT

1978 (2018) 1979 (2018) 1974 (2018) 1977 (2018) 1976 (2018) 1975 (2018) 1971 (2018) 1972 (2018) 1973 (2018) 1969 (2018) 1965 (2018) 1970 (2018) 1968 (2018) 1967 (2018) 1966 (2018) 1964 (2018) 1961 (2018)  No Access . April 2018

Study of the interaction of potassium ion channel protein with micelle by molecular dynamics simulation

Anil Shantappa and Keka Talukdar

AIP Conference Proceedings **1942**, 040008 (2018);
<https://doi.org/10.1063/1.5028617>

SHOW ABSTRACT

 No Access . April 2018

Effect of polymer concentration on structure and rheology of poly (sodium acrylate) hydrogels

Mithra K., Santripati Khandai, Banani Mishra and Sidhartha S. Jena

AIP Conference Proceedings **1942**, 040009 (2018);
<https://doi.org/10.1063/1.5028618>

SHOW ABSTRACT

 No Access . April 2018

Preparation of folic acid conjugated hematite nanoparticles using high


- 1963 (2018) 
- 1958 (2018) 
- 1953 (2018) 
- 1962 (2018) 
- 1960 (2018) 
- 1959 (2018) 
- 1956 (2018) 
- 1947 (2018) 
- 1946 (2018) 
- 1952 (2018) 
- 1949 (2018) 
- 1943 (2018) 
- 1957 (2018) 
- 1955 (2018) 
- 1950 (2018) 
- 1951 (2018) 
- 1954 (2018) 
- 1942 (2018) 

energy ball milling for biomedical applications

Dwipak Prasad Sahu and S. Narayana
Jammalamadaka

AIP Conference Proceedings **1942**, 040010 (2018);
<https://doi.org/10.1063/1.5028619>

SHOW ABSTRACT


 No Access . April 2018

Study of crystallinity and thermal behavior of gamma irradiated luffa fiber

Subhashree Patra, Kamal Lochan Mohanta and
Chhatrapati Parida

AIP Conference Proceedings **1942**, 040011 (2018);
<https://doi.org/10.1063/1.5028620>

SHOW ABSTRACT

 No Access . April 2018

Influence of polyethylene glycol on percolation dynamics of reverse microemulsions

P. M. Geethu, Indresh Yadav, V. K. Aswal and D. K.
Satapathy

AIP Conference Proceedings **1942**, 040012 (2018);
<https://doi.org/10.1063/1.5028621>

Issue 1, April 10

SHOW ABSTRACT

1948 (2018) ✓

1940 (2018) ✓

1945 (2018) ✓

1944 (2018) ✓

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1933 (2018) ✓

1931 (2018) ✓

1927 (2018) ✓

1934 (2018) ✓

1930 (2018) ✓

1928 (2018) ✓

 No Access . April 2018

Phase behavior of thermotropic chiral liquid crystal with wide blue phase

P. J. Jessy, S. Radha and Patel Nainesh

AIP Conference Proceedings **1942**, 040013 (2018);
<https://doi.org/10.1063/1.5028622>

SHOW ABSTRACT

 No Access . April 2018

Surfactant induced stabilization of nano liquid crystalline (dodecane-phytantriol) droplet

S. Abbas, Debasish Saha, Sugam Kumar, V. K. Aswal and J. Kohlbrecher

AIP Conference Proceedings **1942**, 040014 (2018);
<https://doi.org/10.1063/1.5028623>

SHOW ABSTRACT

 No Access . April 2018

Effect of embedded polyelectrolyte chains on microstructure of polyacrylamide hydrogels

- 1929 (2018) ▼
- 1924 (2018) ▼
- 1926 (2018) ▼
- 1920 (2018) ▼
- 1925 (2018) ▼
- 1923 (2018) ▼
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- 1916 (2017) ▼
- 1912 (2017) ▼
- 1910 (2017) ▼
- 1913 (2017) ▼
- 1911 (2017) ▼

Santripati Khandai, Mithra K., Banani Mishra and Sidhartha S. Jena

AIP Conference Proceedings **1942**, 040015 (2018);
<https://doi.org/10.1063/1.5028624>

SHOW ABSTRACT

 No Access . April 2018

Investigation of intermolecular interaction of binary mixture of acrylonitrile with bromobenzene

S. D. Deshmukh, K. L. Pattebahadur, A. G. Mohod, S. S. Patil and P. W. Khirade

AIP Conference Proceedings **1942**, 040016 (2018);
<https://doi.org/10.1063/1.5028625>

SHOW ABSTRACT

 No Access . April 2018

Step-wise potential development across the lipid bilayer under external electric fields

Amit Kumar Majhi

AIP Conference Proceedings **1942**, 040017 (2018);
<https://doi.org/10.1063/1.5028626>

SHOW ABSTRACT

1901 (2017) ✓

1909 (2017) ✓

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1897 (2017) ✓

1896 (2017) ✓

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1892 (2017) ✓

1895 (2017) ✓


 No Access . April 2018

Conformational, vibrational spectroscopic and quantum chemical studies on 5-methoxyindole-3-carboxaldehyde: A DFT approach

S. Christopher Jeyaseelan, Shamima Hussain, R. Premkumar, T. N. Rekha and A. Milton Franklin Benial

AIP Conference Proceedings **1942**, 040018 (2018);
<https://doi.org/10.1063/1.5028627>

SHOW ABSTRACT

 No Access . April 2018

Magnetic hyperthermia in water based ferrofluids: Effects of initial susceptibility and size polydispersity on heating efficiency

B. B. Lahiri, Surojit Ranoo, T. Muthukumar and John Philip

AIP Conference Proceedings **1942**, 040019 (2018);
<https://doi.org/10.1063/1.5028628>

SHOW ABSTRACT

 No Access . April 2018

Triton X-100 functionalized

1890 (2017) ✓

1891 (2017) ✓

1887 (2017) ✓

1882 (2017) ✓

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1880 (2017) ✓

1877 (2017) ✓

1881 (2017) ✓

1872 (2017) ✓

1879 (2017) ✓


1876 (2017) ✓

Fe₃O₄ nanoparticles for biomedical applications

Santosh L. Gawali, Devendra P. Madan, K. C. Barick, R. Somani and P. A. Hassan

AIP Conference Proceedings 1942, 040020 (2018);
<https://doi.org/10.1063/1.5028629>

SHOW ABSTRACT


 No Access . April 2018

Control of magnetization dynamics and magnetic properties of PLD deposited YIG thin films on different substrates

G. Gurjar, Vinay Sharma, S. Patnaik and Bijoy K. Kuanr

AIP Conference Proceedings 1942, 040021 (2018);
<https://doi.org/10.1063/1.5028630>

SHOW ABSTRACT

 No Access . April 2018

Diffusion, swelling, cross linkage study and mechanical properties of ZnO doped PVA/NaAlg blend polymer nanocomposite

B. Guruswamy, V. Ravindrachary, C. Shruthi, Shreedatta Hegde and Rohan N. Sagar

AIP Conference Proceedings 1942, 040022 (2018);

1871 (2017) ✓

<https://doi.org/10.1063/1.5028631>

1869 (2017) ✓


SHOW ABSTRACT

1875 (2017) ✓

1870 (2017) ✓

CONTRIBUTED PAPERS C. Nano-Materials

1868 (2017) ✓

 No Access . April 2018

1873 (2017) ✓

Investigations on structural, optical and magnetic properties of Dy-doped zinc ferrite nanoparticles

1867 (2017) ✓

P. Annie Vinosha, S. Deepapriya, John. D. Rodney and S. Jerome Das

1864 (2017) ✓

AIP Conference Proceedings **1942**, 050001 (2018); <https://doi.org/10.1063/1.5028632>

1857 (2017) ✓

1866 (2017) ✓

SHOW ABSTRACT

1865 (2017) ✓

1863 (2017) ✓

1859 (2017) ✓

 No Access . April 2018

1860 (2017) ✓

Enhanced supercapacitive behaviour of Fe₃O₄/fMWCNT nanoassemblies synthesized by PEG-600 assisted solvothermal method

1861 (2017) ✓

M. L. Aparna, Sathyanarayanan P. and Niroj Kumar Sahu

1862 (2017) ✓

AIP Conference Proceedings **1942**, 050002 (2018); <https://doi.org/10.1063/1.5028633>

1858 (2017) ✓

1852 (2017) ✓

1850 (2017) ✓

SHOW ABSTRACT

1854 (2017) ✓

1851 (2017) ✓

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1846 (2017) ✓

1844 (2017) ✓

1842 (2017) ✓

1845 (2017) ✓

1839 (2017) ✓


 No Access . April 2018

Third order nonlinear optical properties of graphene quantum dots under continuous wavelength regime at 532 nm

K. Kumara, T. C. S. Shetty, P. S. Patil, Shivaraj R. Maidur and S. M. Dharmaprakash

AIP Conference Proceedings **1942**, 050003 (2018);
<https://doi.org/10.1063/1.5028634>

SHOW ABSTRACT


 No Access . April 2018

Structural and dielectric studies of Ce doped BaSnO₃ perovskite nanostructures

S. Lilly Angel, K. Deepa, N. Rajamanickam, K. Jayakumar and K. Ramachandran

AIP Conference Proceedings **1942**, 050004 (2018);
<https://doi.org/10.1063/1.5028635>

SHOW ABSTRACT

 No Access . April 2018

Ground state properties of an exciton in a GaAs quantum dot


- 1843 (2017) ✓
- 1838 (2017) ✓
- 1837 (2017) ✓
- 1834 (2017) ✓
- 1830 (2017) ✓
- 1835 (2017) ✓
- 1833 (2017) ✓
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- 1821 (2017) ✓
- 1820 (2017) ✓
- 1808 (2017) ✓

in the presence of an external magnetic field using $1/N$ expansion method

Luhluh Jahan K. and Ashok Chatterjee

AIP Conference Proceedings **1942**, 050005 (2018);
<https://doi.org/10.1063/1.5028636>

SHOW ABSTRACT


 No Access . April 2018

Mechanical, dielectric and surface analysis of hydroxyapatite doped anions for implantations

S. Helen and A. Ruban Kumar

AIP Conference Proceedings **1942**, 050006 (2018);
<https://doi.org/10.1063/1.5028637>


SHOW ABSTRACT

 No Access . April 2018







A comprehensive study of structural and electrical properties of SnO_2 and $\text{Sn}_{0.95}\text{Mn}_{0.05}\text{O}_2$

Naseem Ahmad, Shakeel Khan, Mohd Mohsin Nizam Ansari and Richa Bhargava







AIP Conference Proceedings **1942**, 050007 (2018);
<https://doi.org/10.1063/1.5028638>

1818 (2017) 






SHOW ABSTRACT

1812 (2017) 1822 (2017) 1819 (2017) 1816 (2017) 1811 (2017) 1809 (2017) 1814 (2017) 

SHOW ABSTRACT

1810 (2017) 1817 (2017) 1815 (2017) 1806 (2017) 1813 (2017) 1804 (2017) 

SHOW ABSTRACT

1798 (2017) 1807 (2017) 1805 (2017) 1793 (2017)  No Access . April 2018

Structural and room temperature dielectric properties of ethylene glycol assisted pure and Al doped NiO nanoparticles

1803 (2017) ✓

Mohd Naseem Siddique, Ateeq Ahmed and P. Tripathi

1801 (2017) ✓


AIP Conference Proceedings **1942**, 050010 (2018);
<https://doi.org/10.1063/1.5028641>

1800 (2017) ✓

SHOW ABSTRACT

1795 (2017) ✓

1802 (2017) ✓

 No Access . April 2018

1799 (2017) ✓

Structural, magnetic and impedance spectroscopic analysis of LaFeO₃ nano-particles

1794 (2017) ✓

T. Lakshmana Rao, M. K. Pradhan and S. Dash

1797 (2017) ✓

1796 (2017) ✓


AIP Conference Proceedings **1942**, 050011 (2018);
<https://doi.org/10.1063/1.5028642>

1792 (2017) ✓

SHOW ABSTRACT

1788 (2017) ✓

1791 (2016) ✓

 No Access . April 2018

1789 (2016) ✓

Hydrogen adsorption properties based on holey graphene sheets

1790 (2016) ✓

Amanpreet Kaur, Jasmeet Kaur, Anita Hastir, Virpal and Ravi Chand Singh

1785 (2016) ✓

1784 (2016) ✓

AIP Conference Proceedings **1942**, 050012 (2018);
<https://doi.org/10.1063/1.5028643>

1786 (2016) ✓

SHOW ABSTRACT

1783 (2016) ✓

1787 (2016) ✓

1779 (2016) ✓

1777 (2016) ✓

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1772 (2016) ✓


1770 (2016) ✓

1771 (2016) ✓

1768 (2016) ✓

1767 (2016) ✓

1766 (2016) ✓


 No Access . April 2018

Synthesis and characterization of Y_2O_3 nano-material: An experimental and theoretical study

Sheeraz Ahmad, Mohd Faizan, Shabbir Ahmad and Mohd Ikram

AIP Conference Proceedings 1942, 050013 (2018);
<https://doi.org/10.1063/1.5028644>

SHOW ABSTRACT


 No Access . April 2018

Enhanced room temperature magneto resistance in (1-x) % $La_{0.7}Sr_{0.3}MnO_3$ -x %WAX (x=0, 0.1, 0.2 and 1.0) nanocomposites

Debajit Deb, Puja Dey, Sanjay Kumar Mandal, Debarati Nath and Aparna Nath

AIP Conference Proceedings 1942, 050014 (2018);
<https://doi.org/10.1063/1.5028645>

SHOW ABSTRACT

 No Access . April 2018

Room temperature magnetoelectric coupling and electrical properties of Ni doped Co - ferrite - PZT


- 1764 (2016) ∨
- 1763 (2016) ∨
- 1765 (2016) ∨
- 1761 (2016) ∨
- 1762 (2016) ∨
- 1759 (2016) ∨
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- 1753 (2016) ∨
- 1752 (2016) ∨
- 1733 (2016) ∨
- 1745 (2016) ∨
- 1740 (2016) ∨

nanocomposites

Sarit Chakraborty, S. K. Mandal, P. Dey and B. Saha

AIP Conference Proceedings **1942**, 050015 (2018);
<https://doi.org/10.1063/1.5028646>

SHOW ABSTRACT

 No Access . April 2018

Magnetoelectric coupling and electrical properties of inorganic-organic based LSMO - PVDF hybrid nanocomposites

Rajesh Debnath, S. K. Mandal, P. Dey and A. Nath

AIP Conference Proceedings **1942**, 050016 (2018);
<https://doi.org/10.1063/1.5028647>

SHOW ABSTRACT

1749 (2016) ✓

1751 (2016) ✓

1750 (2016) ✓

1743 (2016) ✓

1748 (2016) ✓

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1739 (2016) ✓

1734 (2016) ✓

1735 (2016) ✓

1731 (2016) ✓

1736 (2016) ✓

1732 (2016) ✓

1730 (2016) ✓



No Access . April 2018

The ground state magnetic moment and susceptibility of a two electron Gaussian quantum dot

Aalu Boda and Ashok Chatterjee

AIP Conference Proceedings **1942**, 050017 (2018);
<https://doi.org/10.1063/1.5028648>

SHOW ABSTRACT



No Access . April 2018

Impedance spectroscopy of water soluble resin modified by zirconium sulphate

Anandraj Joseph and Girish M. Joshi

AIP Conference Proceedings **1942**, 050018 (2018);
<https://doi.org/10.1063/1.5028649>

SHOW ABSTRACT



No Access . April 2018

Structural, magnetic, microwave and ac induction heating study of $\text{Li}_{0.35}\text{Zn}_{0.30}\text{Co}_{0.05}\text{Fe}_{2.3}\text{O}_4$ integrated in multi-walled carbon nanotube matrix

Madhumita Dalal, Raghmani S. Ningthoujam and

1728 (2016) ✓

1727 (2016) ✓

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1715 (2016) ✓

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1716 (2016) ✓


1712 (2016) ✓

1714 (2016) ✓

Pabitra K. Chakrabarti

AIP Conference Proceedings **1942**, 050019 (2018);
<https://doi.org/10.1063/1.5028650>


SHOW ABSTRACT

 No Access . April 2018

Magnetic field tunable ac electrical transport of LaFeO₃-wax nanocomposites

Supratim Roy, S. K. Mandal, Rajesh Debnath,
Debajyoti Nath and P. DeyAIP Conference Proceedings **1942**, 050020 (2018);
<https://doi.org/10.1063/1.5028651>

SHOW ABSTRACT

 No Access . April 2018

Dielectric properties and activation behavior of gadolinium doped nanocrystalline yttrium chromite

R. Sinha, S. Basu and A. K. Meikap

AIP Conference Proceedings **1942**, 050021 (2018);
<https://doi.org/10.1063/1.5028652>

SHOW ABSTRACT

1711 (2016) ✓

1707 (2016) ✓

1706 (2016) ✓

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1708 (2016) ✓

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1697 (2015) ✓

1699 (2015) ✓

1700 (2015) ✓

1692 (2015) ✓

1695 (2015) ✓



No Access . April 2018

Heating efficiency dependency on size and morphology of magnetite nanoparticles

Kinnari Parekh, Harshida Parmar, Vinay Sharma and R. V. Ramanujan

AIP Conference Proceedings 1942, 050022 (2018); <https://doi.org/10.1063/1.5028653>

SHOW ABSTRACT



No Access . April 2018

Tetramethylene glycol mediated hydrothermal synthesis of defect-rich SnO₂ nanoparticles for fast adsorption and degradation of MB dye

Barkha Rani, Charushila Vasant Jadhao and Niroj Kumar Sahu

AIP Conference Proceedings 1942, 050023 (2018); <https://doi.org/10.1063/1.5028654>

SHOW ABSTRACT



No Access . April 2018

Crystallite size strain analysis of nanocrystalline La_{0.7}Sr_{0.3}MnO₃ perovskite by

1693 (2015) ✓

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1681 (2015) ✓

1680 (2015) ✓

1677 (2015) ✓

1679 (2015) ✓

1678 (2015) ✓

1676 (2015) ✓

Williamson-Hall plot method

Dinesh Kumar, Narendra Kumar Verma, Chandra Bhal Singh and Akhilesh Kumar Singh

AIP Conference Proceedings **1942**, 050024 (2018);
<https://doi.org/10.1063/1.5028655>

SHOW ABSTRACT

 No Access . April 2018

Sunlight impelled photocatalytic pursuance of Ag-TiO₂-SGO and Pt-TiO₂-SGO ternary nanocomposites on rhodamine B degradation

K. Alamelu and B. M. Jaffar Ali

AIP Conference Proceedings **1942**, 050025 (2018);
<https://doi.org/10.1063/1.5028656>

SHOW ABSTRACT

 No Access . April 2018

One-step synthesis and characterizations of cerium oxide nanoparticles in an ambient temperature via Co-precipitation method

Malatesh S. Pujar, Shirajahammad M. Hunagund, Vani R. Desai, Shivaprasadgouda Patil and Ashok H. Sidarai

AIP Conference Proceedings **1942**, 050026 (2018);

1675 (2015) ✓


<https://doi.org/10.1063/1.5028657>

1674 (2015) ✓

SHOW ABSTRACT

1673 (2015) ✓

1672 (2015) ✓

 No Access . April 2018

Hydrothermal synthesis infrared to visible upconversion luminescence of $\text{SrMoO}_4: \text{Er}^{3+}/\text{Yb}^{3+}$ phosphor

Shriya Sinha and Kaushal Kumar

AIP Conference Proceedings **1942**, 050027 (2018);<https://doi.org/10.1063/1.5028658>

1670 (2015) ✓

1671 (2015) ✓

1669 (2015) ✓


1666 (2015) ✓

1668 (2015) ✓

SHOW ABSTRACT

1665 (2015) ✓

1667 (2015) ✓

 No Access . April 2018

Picosecond laser fabricated Ag, Au and Ag-Au nanoparticles for detecting ammonium perchlorate using a portable Raman spectrometer

Chandu Byram, Sree Sathya Bharathi Moram and
Venugopal Rao SomaAIP Conference Proceedings **1942**, 050028 (2018);<https://doi.org/10.1063/1.5028659>

1664 (2015) ✓

1663 (2015) ✓

1661 (2015) ✓

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1644 (2015) ✓

1643 (2015) ✓

1642 (2015) ✓

1641 (2015) ✓

1640 (2015) ✓


 No Access . April 2018

Microstructural and optical properties of Mn doped NiO nanostructures synthesized via sol-gel method

Shamim H. Shah, Wasi Khan, Swaleha Naseem, Shahid Husain and M. Nadeem

AIP Conference Proceedings **1942**, 050029 (2018);
<https://doi.org/10.1063/1.5028660>

SHOW ABSTRACT


 No Access . April 2018

An atomistic study of crack-void interaction in aluminum

Sagar Chandra, M. K. Samal, V. M. Chavan and S. Raghunathan

AIP Conference Proceedings **1942**, 050030 (2018);
<https://doi.org/10.1063/1.5028661>



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Effect of Cu doping at Mn-site on structural and magnetic properties of nanocrystalline $\text{La}_{0.7}\text{Te}_{0.3}\text{Mn}_{0.9}\text{Cu}_{0.1}\text{O}_3$

Meenakshi, Amit Kumar and Rabindra Nath Mahto


AIP Conference Proceedings **1942**, 050031 (2018);

1639 (2014) <https://doi.org/10.1063/1.5028662>1637 (2014) 


SHOW ABSTRACT

1628 (2014) 1638 (2014)  No Access . April 2018




Field electron extraction from surface modified Cd(OH)₂ nanowires

1636 (2014) 




Vivekanand S. Bagal, Girish P. Patil, Chandradip Jadhav, Malvika Sharma, Sugam Shivhare and Padmakar G. Chavan

1635 (2014) 


AIP Conference Proceedings **1942**, 050032 (2018);
<https://doi.org/10.1063/1.5028663>

1633 (2014) 1634 (2014) 1632 (2014) 


SHOW ABSTRACT

1631 (2014) 1630 (2014)  No Access . April 2018





Frequency and temperature dependence of dielectric and ac electrical properties of NiFe₂O₄-ZnO multiferroic nanocomposite

1623 (2014) 



Papia Dutta, S. K. Mandal, P. Dey and A. Nath

1629 (2014) 

AIP Conference Proceedings **1942**, 050033 (2018);
<https://doi.org/10.1063/1.5028664>

1625 (2014) 1626 (2014) 1627 (2014) 1622 (2014) 

SHOW ABSTRACT

1621 (2014)  No Access . April 2018

1624 (2014) ✓

1620 (2014) ✓

1619 (2014) ✓

1618 (2014) ✓

1615 (2014) ✓

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1610 (2014) ✓

1609 (2014) ✓

1608 (2014) ✓

1606 (2014) ✓

1607 (2014) ✓

1605 (2014) ✓


1604 (2014) ✓

Upconversion fluorescence tyrosine doped LaF₃:Dy quantum dots useful in biolabeling and biotagging

Amit T. Singh and M. M. Khandpekar

AIP Conference Proceedings **1942**, 050034 (2018);
<https://doi.org/10.1063/1.5028665>

SHOW ABSTRACT


 No Access . April 2018

Polysulfone - CNT composite membrane with enhanced water permeability

Bhakti Hirani, Soumitra Kar, V. K. Aswal, R. C. Bindal and P. S. Goyal

AIP Conference Proceedings **1942**, 050035 (2018);
<https://doi.org/10.1063/1.5028666>

SHOW ABSTRACT

 No Access . April 2018

Effect of laser energy on the SPR and size of silver nanoparticles synthesized by pulsed laser ablation in distilled water

Pralhad K. Baruah, Ashwini K. Sharma and Alika Khare

AIP Conference Proceedings **1942**, 050036 (2018);

1603 (2014) ✓


<https://doi.org/10.1063/1.5028667>

1602 (2014) ✓

SHOW ABSTRACT

1601 (2014) ✓

1597 (2014) ✓

 No Access . April 2018

Synthesis and dc electrical conductivity of Cr-doped CeO₂ nanoparticles by solution combustion method

1600 (2014) ✓

1599 (2014) ✓

B. M. Harish, B. S. Avinash, V. S. Chaturmukha, H. S. Jayanna, S. Suresh, C. S. Naveen and Ashok R. Lamani

1598 (2014) ✓

AIP Conference Proceedings **1942**, 050037 (2018);
<https://doi.org/10.1063/1.5028668>

1593 (2014) ✓


1596 (2014) ✓

1595 (2014) ✓

SHOW ABSTRACT

1594 (2014) ✓

1591 (2014) ✓

 No Access . April 2018

Removal of Cu(II) metal ions from aqueous solution by amine functionalized magnetic nanoparticles

1592 (2014) ✓

1590 (2014) ✓

V. P. Kothavale, V. C. Karade, P. P. Waifalkar, Subasa C. Sahoo, P. S. Patil and P. B. Patil

1589 (2014) ✓

AIP Conference Proceedings **1942**, 050038 (2018);
<https://doi.org/10.1063/1.5028669>

1588 (2014) ✓

1586 (2014) ✓

SHOW ABSTRACT

1587 (2014) ✓

1583 (2014) ✓

1585 (2014) ✓

1581 (2014) ✓

1584 (2014) ✓

1580 (2014) ✓

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1573 (2014) ✓

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1577 (2014) ✓

1575 (2014) ✓


1572 (2013) ✓

1570 (2013) ✓

1569 (2013) ✓

1567 (2013) ✓

1568 (2013) ✓


 No Access . April 2018

PEG capped CaS nanoparticles synthesized by wet chemical co-precipitation method

S. Rekha and E. I. Anila

AIP Conference Proceedings **1942**, 050039 (2018);
<https://doi.org/10.1063/1.5028670>

SHOW ABSTRACT

 No Access . April 2018

Synthesis of pure and doped ZnS crystals and studies on their different properties

Azharuddin Z. Shaikh, Narendra B. Shirsath and Prabhakar S. Sonawane

AIP Conference Proceedings **1942**, 050040 (2018);
<https://doi.org/10.1063/1.5028671>


SHOW ABSTRACT

 No Access . April 2018








Morphology, structure and optical properties of hydrothermally synthesized CeO₂/CdS nanocomposites

Biswajyoti Mohanty and J. Nayak








AIP Conference Proceedings **1942**, 050041 (2018);
<https://doi.org/10.1063/1.5028672>

1566 (2013) 




SHOW ABSTRACT

1571 (2013) 1565 (2013) 1564 (2013) 1563 (2013) 1562 (2013) 1560 (2013) 1561 (2013) 


SHOW ABSTRACT

1558 (2013) 1559 (2013) 1557 (2013) 1556 (2013) 1551 (2013) 1552 (2013) 1554 (2013) 

SHOW ABSTRACT

1555 (2013) 1553 (2013) 1550 (2013) 

Prashant B. Kharat, Sandeep B. Somvanshi,

 No Access . April 2018

Ultrafast light matter interaction in CdSe/ZnS core-shell quantum dots

Rajesh Kumar Yadav, Rituraj Sharma, Anirban Mondal and K. V. Adarsh


AIP Conference Proceedings **1942**, 050042 (2018);
<https://doi.org/10.1063/1.5028673>

 No Access . April 2018

First principles calculations for interaction of tyrosine with (ZnO)₃ cluster

Satvinder Singh, Gurinder Singh, Aman Kaura and S. K. Tripathi

AIP Conference Proceedings **1942**, 050043 (2018);
<https://doi.org/10.1063/1.5028674>

 No Access . April 2018

Temperature dependent viscosity of cobalt ferrite / ethylene glycol ferrofluids

1549 (2013) ✓

Jitendra S. Kounsalye, Suraj S. Deshmukh, Pankaj
P. Khirade and K. M. Jadhav

1546 (2013) ✓


AIP Conference Proceedings **1942**, 050044 (2018);
<https://doi.org/10.1063/1.5028675>

1548 (2013) ✓

SHOW ABSTRACT

1547 (2013) ✓

1530 (2013) ✓

 No Access . April 2018

1545 (2013) ✓

**Fabrication of bismuth ferrite
based hybrid nanostructures:
Insight into a catalytic and
sensing properties for the
detection of biomolecules**

1544 (2013) ✓

S. Bharathkumar, M. Sakar and S. Balakumar

1543 (2013) ✓

AIP Conference Proceedings **1942**, 050045 (2018);
<https://doi.org/10.1063/1.5028676>

1542 (2013) ✓

SHOW ABSTRACT

1539 (2013) ✓

1540 (2013) ✓

1538 (2013) ✓

1541 (2013) ✓

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1517 (2013) ✓

1518 (2013) ✓

1514 (2013) ✓

1515 (2013) ✓

1516 (2013) ✓



No Access . April 2018

Synthesis and characterization of graphene quantum dots-silver nanocomposites

M. Vandana, S. P. Ashokkumar, H. Vijeth, M. Niranjana, L. Yesappa and H. Devendrappa

AIP Conference Proceedings **1942**, 050046 (2018);
<https://doi.org/10.1063/1.5028677>

SHOW ABSTRACT



No Access . April 2018

Sensing behavior of a graphene quantum dot phenalenyl towards toxic gases

Vaishali Sharma, Som Narayan, Shweta D. Dabhi, Satyam Shinde and Prafulla K. Jha

AIP Conference Proceedings **1942**, 050047 (2018);
<https://doi.org/10.1063/1.5028678>

SHOW ABSTRACT



No Access . April 2018

Low cost synthesis of TiO₂-C nanocomposite powder for high efficiency visible light photocatalysis

A. K. Mohapatra and J. Nayak

1512 (2013) ✓


AIP Conference Proceedings 1942, 050048 (2018);
<https://doi.org/10.1063/1.5028679>

1511 (2013) ✓

1513 (2013) ✓

SHOW ABSTRACT

1510 (2013) ✓

 No Access . April 2018

1507 (2012) ✓

Role of polymer matrix on photo-sensitivity of CdSe polymer nanocomposites

1509 (2012) ✓

Ramneek Kaur and S. K. Tripathi

1508 (2012) ✓

AIP Conference Proceedings 1942, 050049 (2018);
<https://doi.org/10.1063/1.5028680>


1506 (2012) ✓

1504 (2012) ✓

SHOW ABSTRACT

1505 (2012) ✓

1503 (2012) ✓

 No Access . April 2018

1502 (2012) ✓

Armchair and zigzag nanoribbons of gold and silver: A DFT study

1501 (2012) ✓

Pooja Kapoor, Munish Sharma, Ashok Kumar and P. K. Ahluwalia

1500 (2012) ✓

AIP Conference Proceedings 1942, 050050 (2018);
<https://doi.org/10.1063/1.5028681>


1499 (2012) ✓

1498 (2012) ✓

SHOW ABSTRACT

1484 (2012) ✓

1496 (2012) ✓

 No Access . April 2018

Latent fingerprint detection

1493 (2012) ✓

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1471 (2012) ✓

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1487 (2012) ✓

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1441 (2012) ✓

1486 (2012) ✓

1485 (2012) ✓


1482 (2012) ✓

for NaYF₄:Er³⁺/Yb³⁺ upconversion phosphor synthesized by thermal decomposition route

S. K. Maurya, S. P. Tiwari, A. Kumar and K. Kumar

AIP Conference Proceedings **1942**, 050051 (2018);
<https://doi.org/10.1063/1.5028682>

SHOW ABSTRACT

 No Access . April 2018

Nanometric study of nickel oxide prepared by sol gel process

R. Raut Dessai, J. A. E. Desa, D. Sen and P. D. Babu

AIP Conference Proceedings **1942**, 050052 (2018);
<https://doi.org/10.1063/1.5028683>

SHOW ABSTRACT

1479 (2012) ✓

1478 (2012) ✓

1480 (2012) ✓

1476 (2012) ✓

1474 (2012) ✓

1475 (2012) ✓

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1466 (2012) ✓

1464 (2012) ✓


1467 (2012) ✓

1461 (2012) ✓

1463 (2012) ✓

1465 (2012) ✓

1459 (2012) ✓


 No Access . April 2018

pH studies in the synthesis of amino acid coated hydrophilic MNPs

Namita Saxena and Charu Lata Dube

AIP Conference Proceedings **1942**, 050053 (2018);
<https://doi.org/10.1063/1.5028684>

SHOW ABSTRACT


 No Access . April 2018

In-situ small angle x-ray scattering investigation on nucleation and growth of silica colloids

J. Bahadur, B. M. Tripathi, J. Prakash, Avik Das, D. Sen and S. Mazumder

AIP Conference Proceedings **1942**, 050054 (2018);
<https://doi.org/10.1063/1.5028685>



SHOW ABSTRACT

 No Access . April 2018



Superparamagnetic behavior in $\text{Sn}_{0.95}\text{Mg}_{0.05}\text{O}_2$ nanoparticles

Ateeq Ahmed, M. Naseem Siddique, Tinku Ali and P. Tripathi

AIP Conference Proceedings **1942**, 050055 (2018);

1462 (2012) <https://doi.org/10.1063/1.5028686>1458 (2012) 






SHOW ABSTRACT

1460 (2012) 1455 (2012)  No Access . April 2018



Influence of Ag substitution on structural and dielectric properties of TiO₂ nanoparticles

T. Ali, Ateeq Ahmed, M. Naseem Siddique, Tabish Aftab and P. Tripathi

AIP Conference Proceedings **1942**, 050056 (2018);
<https://doi.org/10.1063/1.5028687>

1440 (2012) 1444 (2012) 1449 (2012) 1451 (2012) 1456 (2012) 







SHOW ABSTRACT

1454 (2012) 1446 (2012)  No Access . April 2018


Colloidal silver nanoparticles prepared by UV-light induced citrate reduction technique for the quantitative detection of uric acid

Anupam Maity and Sovan Kumar Panda

AIP Conference Proceedings **1942**, 050057 (2018);
<https://doi.org/10.1063/1.5028688>

1442 (2012) 1457 (2012) 1435 (2012) 1434 (2012) 1447 (2012) 1448 (2012) 

SHOW ABSTRACT

1438 (2012)  No Access . April 2018

1433 (2012) ✓

1450 (2012) ✓

1436 (2012) ✓

1452 (2012) ✓

1437 (2012) ✓

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1432 (2012) ✓

1445 (2012) ✓

1427 (2012) ✓

1426 (2012) ✓

1424 (2012) ✓

1428 (2012) ✓


1422 (2012) ✓

Spin canting and magnetic transition in $\text{Ni}_x\text{Zn}_{1-x}\text{Fe}_2\text{O}_4$ ($x=0.0, 0.5$ and 1.0) nanoparticles

Stuti Rani, Dharmendra Singh Raghav, Prashant Yadav and G. D. Varma

AIP Conference Proceedings **1942**, 050058 (2018);
<https://doi.org/10.1063/1.5028689>

SHOW ABSTRACT

 No Access . April 2018

Highly sensitive H_2 gas sensor of Co doped ZnO nanostructures

Vijendra Singh Bhati, Sapana Ranwa and Mahesh Kumar

AIP Conference Proceedings **1942**, 050059 (2018);
<https://doi.org/10.1063/1.5028690>

SHOW ABSTRACT

 No Access . April 2018

Enhanced sensing response with complete recovery of MoS_2 sensor under photoexcitation

Neeraj Goel, Rahul Kumar and Mahesh Kumar

AIP Conference Proceedings **1942**, 050060 (2018);
<https://doi.org/10.1063/1.5028691>

1423 (2012) ✓

SHOW ABSTRACT

1421 (2012) ✓

1425 (2012) ✓

1420 (2012) ✓

1413 (2012) ✓

1416 (2011) ✓

1414 (2011) ✓

1400 (2011) ✓

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1418 (2011) ✓

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1412 (2011) ✓

1393 (2011) ✓

1415 (2011) ✓

1410 (2011) ✓

1411 (2011) ✓


 No Access . April 2018

Effect of particle size, shape and temperature on the volume thermal expansion and bulk modulus of nanocrystalline germanium

Ghanshyam R. Patel and Tushar C. Pandya

AIP Conference Proceedings **1942**, 050061 (2018);
<https://doi.org/10.1063/1.5028692>

SHOW ABSTRACT


 No Access . April 2018

Thermal oxidation and nitridation of Si nanowalls prepared by metal assisted chemical etching

Anil K. Behera, R. N. Viswanath, C. Lakshmanan, S. R. Polaki, R. M. Sarguna and Tom Mathews

AIP Conference Proceedings **1942**, 050062 (2018);
<https://doi.org/10.1063/1.5028693>

SHOW ABSTRACT

 No Access . April 2018

Understanding microstrain anisotropy in yttrium oxide


- 1407 (2011) 
- 1409 (2011) 
- 1368 (2011) 
- 1408 (2011) 
- 1404 (2011) 
- 1397 (2011) 
- 1405 (2011) 
- 1372 (2011) 
- 1402 (2011) 
- 1395 (2011) 
- 1403 (2011) 
- 1401 (2011) 
- 1377 (2011) 
- 1370 (2011) 
- 1374 (2011) 
- 1388 (2011) 
- 1391 (2011) 
- 1396 (2011) 

synthesized by sol-gel route

S. Murugesan, R. Thirumurugesan and P. Parameswaran

AIP Conference Proceedings **1942**, 050063 (2018);
<https://doi.org/10.1063/1.5028694>

SHOW ABSTRACT


 No Access . April 2018

Upward magnetic relaxation in self organizing Fe nanoparticle system

Satyendra Prakash Pal, Gyaneshwar Sharma and P. Sen

AIP Conference Proceedings **1942**, 050064 (2018);
<https://doi.org/10.1063/1.5028695>

SHOW ABSTRACT

 No Access . April 2018

The enhancement in optical and magnetic properties of Na-doped LaFeO₃

E. Devi and B. J. Kalaiselvi

AIP Conference Proceedings **1942**, 050065 (2018);
<https://doi.org/10.1063/1.5028696>

SHOW ABSTRACT

1363 (2011) ✓

1394 (2011) ✓

1382 (2011) ✓

1398 (2011) ✓

1392 (2011) ✓

1387 (2011) ✓

1376 (2011) ✓

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1380 (2011) ✓


1367 (2011) ✓

1379 (2011) ✓

1369 (2011) ✓

1366 (2011) ✓

1378 (2011) ✓


 No Access . April 2018

Preparation and crystalline studies of PVDF hybrid composites

Chethan P. B., N. M. Renukappa and Ganesh Sanjeev

AIP Conference Proceedings **1942**, 050066 (2018);
<https://doi.org/10.1063/1.5028697>

SHOW ABSTRACT


 No Access . April 2018

Symmetry transition via tetravalent impurity and investigations on magnetic properties of $\text{Li}_{0.5}\text{Fe}_{2.5}\text{O}_4$

Jitendra S. Kounsalye, Prashant B. Kharat, Apparao R. Chavan, Ashok V. Humbe, R. M. Borade and K. M. Jadhav

AIP Conference Proceedings **1942**, 050067 (2018);
<https://doi.org/10.1063/1.5028698>

SHOW ABSTRACT

 No Access . April 2018

Graphitic carbon stabilized silver nanoparticles synthesized by a simple chemical precursor method

Bhasker Soni and Somnath Biswas

1361 (2011) ✓

AIP Conference Proceedings 1942, 050068 (2018);
<https://doi.org/10.1063/1.5028699>

1359 (2011) ✓

SHOW ABSTRACT

1365 (2011) ✓

1385 (2011) ✓

 No Access . April 2018

1362 (2011) ✓

A comparative investigation of electrochemical charge storage properties on β , γ , δ and λ -MnO₂ nanoparticles

1373 (2011) ✓

P. Muhammed Shafi, Chelsea Johnson and A. Chandra Bose

1364 (2011) ✓

AIP Conference Proceedings 1942, 050069 (2018);
<https://doi.org/10.1063/1.5028700>

1383 (2011) ✓

1358 (2011) ✓

1357 (2011) ✓

SHOW ABSTRACT

1351 (2011) ✓

1375 (2011) ✓

 No Access . April 2018

1350 (2011) ✓

Effect of cobalt doping on structural and optical properties of nanocrystalline La_{0.8}Pb_{0.2}CrO₃ orthochromite

1349 (2011) ✓

Naima Zarrin and Shahidhusain

1346 (2011) ✓

AIP Conference Proceedings 1942, 050070 (2018);
<https://doi.org/10.1063/1.5028701>

1360 (2011) ✓

1356 (2011) ✓

SHOW ABSTRACT

1347 (2011) ✓

 No Access . April 2018

1342 (2011) ✓

1335 (2011) ✓

1337 (2011) ✓

1371 (2011) ✓

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1345 (2011) ✓

1353 (2011) ✓

1338 (2011) ✓

1348 (2011) ✓

1339 (2011) ✓


1340 (2011) ✓

Progression in structural, magnetic and electrical properties of La-doped group IV elements

Deepapriya S., Annie Vinosha P., John D. Rodney and Jerome Das S.

AIP Conference Proceedings **1942**, 050071 (2018);
<https://doi.org/10.1063/1.5028702>

SHOW ABSTRACT

 No Access . April 2018

Study on photocatalytic activity of nanosized $\text{Co}_{0.3}\text{Zn}_{0.7}\text{Fe}_2\text{O}_4$ synthesized by hydrothermal method

R. Mondal, K. Sarkar, S. Dey, S. Bhattacharjee, C. K. Ghosh and S. Kumar

AIP Conference Proceedings **1942**, 050072 (2018);
<https://doi.org/10.1063/1.5028703>

SHOW ABSTRACT

 No Access . April 2018

Surface modified α -glycine - EuF_3 : Gd nanoparticles for upconversion luminescence

Manoj P. Mahajan and M. M. Khandpekar

AIP Conference Proceedings **1942**, 050073 (2018);
<https://doi.org/10.1063/1.5028704>

1352 (2011) ✓

SHOW ABSTRACT

1328 (2011) ✓

1330 (2011) ✓

1327 (2011) ✓

1332 (2011) ✓

1334 (2011) ✓

1305 (2011) ✓

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1322 (2010) ✓

1325 (2010) ✓

1323 (2010) ✓

1317 (2010) ✓

1316 (2010) ✓

 No Access . April 2018

Nonenzymetic glucose sensing using carbon functionalized carbon doped ZnO nanorod arrays

Pinak Chakraborty, Tanmoy Majumder, Saurab Dhar and Suvra Prakash Mondal

AIP Conference Proceedings **1942**, 050074 (2018);
<https://doi.org/10.1063/1.5028705>

SHOW ABSTRACT

 No Access . April 2018

Deriving magnetite nanostructures from natural resources and investigation of its erythrocyte compatibility

S. Chitra, P. Bargavi, D. Durgalakshmi, M. Balasubramaniam, P. Rajashree and S. Balakumar

AIP Conference Proceedings **1942**, 050075 (2018);
<https://doi.org/10.1063/1.5028706>

SHOW ABSTRACT

 No Access . April 2018

Tin oxide quantum dots embedded iron oxide

1314 (2010) ✓

1319 (2010) ✓

1312 (2010) ✓

1306 (2010) ✓

1318 (2010) ✓

1310 (2010) ✓

1311 (2010) ✓

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1300 (2010) ✓

1251 (2010) ✓

1308 (2010) ✓

1273 (2010) ✓

1296 (2010) ✓


1309 (2010) ✓

composite as efficient lead sensor

Dipa Dutta and Dharendra Bahadur

AIP Conference Proceedings **1942**, 050076 (2018);
<https://doi.org/10.1063/1.5028707>

SHOW ABSTRACT


 No Access . April 2018

Thermal and mechanical analysis of PVA / sulfonated carbon nanotubes composite

Vikrant Yadav, Prem P. Sharma, Abhishek Rajput and Vaibhav Kulshrestha

AIP Conference Proceedings **1942**, 050077 (2018);
<https://doi.org/10.1063/1.5028708>

SHOW ABSTRACT

 No Access . April 2018

Enhanced magnetic properties in $\text{Mn}_{0.6}\text{Zn}_{0.4-x}\text{Ni}_x\text{Fe}_2\text{O}_4$ ($x=0-0.4$) nanoparticles

S. Mallesh, P. Mandal and V. Srinivas

AIP Conference Proceedings **1942**, 050078 (2018);
<https://doi.org/10.1063/1.5028709>

SHOW ABSTRACT

1288 (2010) ✓

1324 (2010) ✓

1299 (2010) ✓

1297 (2010) ✓

1294 (2010) ✓

1292 (2010) ✓

1295 (2010) ✓

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1285 (2010) ✓

1279 (2010) ✓

1277 (2010) ✓

1282 (2010) ✓

1287 (2010) ✓


 No Access . April 2018

Fabrication of composite membranes using copper metal organic framework for energy application

Swati Gahlot, Abhishek Rajput and Vaibhav Kulshrestha

AIP Conference Proceedings **1942**, 050079 (2018);
<https://doi.org/10.1063/1.5028710>

SHOW ABSTRACT


 No Access . April 2018

SiC particle dispersion in nanocrystalline Ni matrix: Restriction to thermal grain growth and its effect on mechanical properties

Arnomitra Chatterjee, Meenu Srivastava and R. N. Singh

AIP Conference Proceedings **1942**, 050080 (2018);
<https://doi.org/10.1063/1.5028711>

SHOW ABSTRACT

 No Access . April 2018

Enhanced mechanical energy harvesting ability of electrospun poly(vinylidene fluoride)/hectorite clay


- 1280 (2010) 
- 1278 (2010) 
- 1291 (2010) 
- 1283 (2010) 
- 1275 (2010) 
- 1276 (2010) 
- 1281 (2010) 
- 1271 (2010) 
- 1272 (2010) 
- 1274 (2010) 
- 1269 (2010) 
- 1268 (2010) 
- 1267 (2010) 
- 1257 (2010) 
- 1265 (2010) 
- 1262 (2010) 
- 1259 (2010) 
- 1263 (2010) 

nanocomposites

Wahida Rahman, Sujoy Kumar Ghosh, Tapas Ranjan Middy and Dipankar Mandal

AIP Conference Proceedings **1942**, 050081 (2018);
<https://doi.org/10.1063/1.5028712>

SHOW ABSTRACT


 No Access . April 2018

Magnetocapacitance effect in core/shell NiO nanoparticles

Subir Roy, Nagaiah Kambhala and S. Angappane

AIP Conference Proceedings **1942**, 050082 (2018);
<https://doi.org/10.1063/1.5028713>

SHOW ABSTRACT


 No Access . April 2018

MWCNT-MnFe₂O₄ nanocomposite for efficient hyperthermia applications

Papori Seal, Monalisa Hazarika, Nibedita Paul and J. P. Borah

AIP Conference Proceedings **1942**, 050083 (2018);
<https://doi.org/10.1063/1.5028714>

SHOW ABSTRACT

 No Access . April 2018

1260 (2010) ✓

1261 (2010) ✓

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1234 (2010) ✓

1244 (2010) ✓

1247 (2010) ✓

1243 (2010) ✓

1242 (2010) ✓


1252 (2010) ✓

Zinc phthalocyanine nanowires based flexible sensor for room temperature Cl₂ detection

Pooja Devi, Rajan Saini, Rajinder Singh, A. Mahajan, R. K. Bedi, D. K. Aswal and A. K. Debnath

AIP Conference Proceedings **1942**, 050084 (2018);
<https://doi.org/10.1063/1.5028715>

SHOW ABSTRACT


 No Access . April 2018

Combined effect of stress and nonparabolicity on the diamagnetic susceptibility of donor states in a double quantum well

I. Janet Sherly and P. Nithiananthi

AIP Conference Proceedings **1942**, 050085 (2018);
<https://doi.org/10.1063/1.5028716>

SHOW ABSTRACT

 No Access . April 2018

Effect of non-parabolicity and confinement potential on exciton binding energy in a quantum well

G. Vignesh and P. Nithiananthi

AIP Conference Proceedings **1942**, 050086 (2018);

1246 (2010) ✓

<https://doi.org/10.1063/1.5028717>

1239 (2010) ✓

SHOW ABSTRACT

1240 (2010) ✓

1255 (2010) ✓

 No Access . April 2018

**Polyethyleneglycol/silver
functionalized reduced
graphene oxide aerogel for
environmental application**

1238 (2010) ✓

G. Vanitha Kumari, S. Asha, A. Nimrodh Ananth, M.
A. Jothi Rajan and T. Mathavan

1226 (2010) ✓

AIP Conference Proceedings **1942**, 050087 (2018);
<https://doi.org/10.1063/1.5028718>

1254 (2010) ✓

1253 (2010) ✓

1245 (2010) ✓

SHOW ABSTRACT

1233 (2010) ✓

1237 (2010) ✓

 No Access . April 2018

**The nucleation of self-poled
electroactive β -phase in Eu^{3+}
doped PVDF nanocomposite
film for optoelectronic
devices**

1235 (2010) ✓

Kuntal Maity and Dipankar Mandal

1230 (2010) ✓

AIP Conference Proceedings **1942**, 050088 (2018);
<https://doi.org/10.1063/1.5028719>

1227 (2010) ✓

1232 (2010) ✓

1224 (2010) ✓

SHOW ABSTRACT

1231 (2010) ✓

1228 (2010) ✓

 No Access . April 2018

1236 (2010) ✓

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1220 (2010) ✓

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1200 (2010) ✓


1214 (2010) ✓

Exciton in a spherical core/shell nanostructure: Influence of surface ligand

B. Anitha and P. Nithiananthi

AIP Conference Proceedings **1942**, 050089 (2018);
<https://doi.org/10.1063/1.5028720>

SHOW ABSTRACT


 No Access . April 2018

Cationic surfactant assisted sonochemical synthesis of Nd³⁺ doped Zn₂SiO₄ nanostructures for solid state lighting applications

R. B. Basavaraj, J. Malleshappa, G. P. Darshan, B. Daruka Prasad and H. Nagabhushana

AIP Conference Proceedings **1942**, 050090 (2018);
<https://doi.org/10.1063/1.5028721>


SHOW ABSTRACT

 No Access . April 2018









Optical and magnetic behaviour of nanocrystalline 5% Ca doped ZnO

Khushboo Punia, Ganesh Lal, V. Rathore and Sudhish Kumar

AIP Conference Proceedings **1942**, 050091 (2018);
<https://doi.org/10.1063/1.5028722>

1209 (2010) 

SHOW ABSTRACT












1208 (2010) 1210 (2010) 1203 (2010) 1204 (2010) 1202 (2010) 1199 (2010) 1206 (2010)  No Access . April 2018

pH dependent conjugation of Ibuprofen to PEGylated nanoparticles

Shivani Bharti, Shikshita Jain, Gurvir Kaur, Shikha Gupta and S. K. Tripathi

AIP Conference Proceedings **1942**, 050092 (2018);
<https://doi.org/10.1063/1.5028723>

SHOW ABSTRACT


1195 (2009) 1201 (2009) 1182 (2009) 1190 (2009) 1185 (2009) 1196 (2009) 1198 (2009) 1193 (2009) 1197 (2009) 1194 (2009)  No Access . April 2018

Structural and electronic properties of in-plane phase engineered WSe₂: A DFT study

Ankush Bharti, Pooja Kapoor, Munish Sharma, Raman Sharma and P. K. Ahluwalia

AIP Conference Proceedings **1942**, 050093 (2018);
<https://doi.org/10.1063/1.5028724>

SHOW ABSTRACT

 No Access . April 2018

Reduced graphene oxide wrapped Ag nanostructures for enhanced SERS activity

1192 (2009) ✓

Anju K. Nair, M. S. Kala, Sabu Thomas and
Nandakumar Kalarikkal

1191 (2009) ✓


AIP Conference Proceedings **1942**, 050094 (2018);
<https://doi.org/10.1063/1.5028725>

1187 (2009) ✓

SHOW ABSTRACT

1189 (2009) ✓

1181 (2009) ✓

 No Access . April 2018

1184 (2009) ✓

**Synthesis of humidity
sensitive zinc stannate
nanomaterials and modelling
of Freundlich adsorption
isotherm model**

1183 (2009) ✓

1188 (2009) ✓

Alfa Sharma, Yogendra Kumar and Parasharam M.
Shirage

1180 (2009) ✓

1179 (2009) ✓


AIP Conference Proceedings **1942**, 050095 (2018);
<https://doi.org/10.1063/1.5028726>

1186 (2009) ✓

SHOW ABSTRACT

1178 (2009) ✓

1175 (2009) ✓

 No Access . April 2018

1177 (2009) ✓

**Transition metal intercalated
bilayer silicene**

1174 (2009) ✓

Dhanshree Pandey, C. Kamal and Aparna
Chakrabarti

1176 (2009) ✓

AIP Conference Proceedings **1942**, 050096 (2018);
<https://doi.org/10.1063/1.5028727>

1173 (2009) ✓

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SHOW ABSTRACT

1172 (2009) ✓

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 No Access . April 2018

Electron beam interaction and its effect on crystalline 2H phase of MoS₂

S. Reshmi, M. V. Akshaya, Palash Kumar Basu and K. Bhattacharjee

AIP Conference Proceedings **1942**, 050097 (2018); <https://doi.org/10.1063/1.5028728>

SHOW ABSTRACT

 No Access . April 2018

Morphological evolution of Bi₂Se₃ nanocrystalline materials synthesized by microwave assisted solvothermal method

Sumit Bera, P. Behera, A. K. Mishra, M. Krishnan, M. M. Patidar, D. Singh, M. Gangrade, R. Venkatesh, U. P. Deshpande, D. M. Phase and V. Ganesan

AIP Conference Proceedings **1942**, 050098 (2018); <https://doi.org/10.1063/1.5028729>

SHOW ABSTRACT

 No Access . April 2018

Synthesis of MnFe₂O₄ magnetic nano hollow spheres by a facile solvothermal route

1155 (2009) ✓

1154 (2009) ✓

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1136 (2009) ✓

1138 (2009) ✓

1133 (2009) ✓

and its characterization

Chaitali Dey, Arka Chaudhuri and Madhuri Mandal Goswami

AIP Conference Proceedings **1942**, 050099 (2018);
<https://doi.org/10.1063/1.5028730>

SHOW ABSTRACT


 No Access . April 2018

Ultrasound assisted sonochemical synthesis of samarium doped Y_2O_3 nanostructures for display applications

K. N. Venkatachalaiah, H. Nagabhushana, R. B. Basavaraj, M. Venkataravanappa and C. Suresh

AIP Conference Proceedings **1942**, 050100 (2018);
<https://doi.org/10.1063/1.5028731>

SHOW ABSTRACT

 No Access . April 2018

Tungsten disulfide nanoparticles anchored on reduced graphene oxide for dye sensitized solar cell applications

Sanjeev Kumar, Om Prakash, Aman Mahajan and Vibha Saxena

AIP Conference Proceedings **1942**, 050101 (2018);

1135 (2009) ✓


<https://doi.org/10.1063/1.5028732>

1137 (2009) ✓

SHOW ABSTRACT

1131 (2009) ✓

1132 (2009) ✓

 No Access . April 2018

MnFe₂O₄/CdSe magneto-fluorescent nanocomposite for possible biomedical applications

1134 (2009) ✓

R. K. Chandunika, R. Vijayaraghavan and Niroj Kumar Sahu

1126 (2009) ✓

AIP Conference Proceedings **1942**, 050102 (2018);
<https://doi.org/10.1063/1.5028733>

1127 (2009) ✓


1128 (2009) ✓

1130 (2009) ✓

SHOW ABSTRACT

1124 (2009) ✓

1120 (2009) ✓

 No Access . April 2018

Experimental investigation of instability in optical and morphological properties of percolated gold thin film during ambient aging

1111 (2009) ✓

Sudheer, C. Mukherjee, S. K. Rai, V. N. Rai and A. K. Srivastava

1125 (2009) ✓

AIP Conference Proceedings **1942**, 050103 (2018);
<https://doi.org/10.1063/1.5028734>

1122 (2009) ✓

1123 (2009) ✓

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SHOW ABSTRACT

1129 (2009) ✓

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1103 (2009) ✓

1097 (2009) ✓

1100 (2009) ✓

1101 (2009) ✓

1099 (2009) ✓


 No Access . April 2018

Structural and optical properties of CdSe nanosheets

Rekha Garg Solanki, P. Rajaram and Aman Arora

AIP Conference Proceedings **1942**, 050104 (2018);
<https://doi.org/10.1063/1.5028735>

SHOW ABSTRACT


 No Access . April 2018

Chirality dependent interaction of ammonia with carbon nanotubes

Keka Talukdar and Anil Shantappa

AIP Conference Proceedings **1942**, 050105 (2018);
<https://doi.org/10.1063/1.5028736>

SHOW ABSTRACT

 No Access . April 2018

Effect of temperature on structure, dielectric and ferroelectric properties of modified BaZrTiO₃ ceramic

Kanta Maan Sangwan, N. Ahlawat, R. S. Kundu,
Suman Rani, Agam Rani and Sunita RaniAIP Conference Proceedings **1942**, 050106 (2018);
<https://doi.org/10.1063/1.5028737>

1102 (2009) ✓

SHOW ABSTRACT

1107 (2009) ✓

1098 (2009) ✓

1096 (2009) ✓

1095 (2009) ✓

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1084 (2008) ✓

1085 (2008) ✓

1080 (2008) ✓

1082 (2008) ✓

 No Access . April 2018

Synthesis of polyetherimide / halloysite nanotubes (PEI/HNTs) based nanocomposite membrane towards hydrogen storage

R. Naresh Muthu, S. Rajashabala and R. Kannan

AIP Conference Proceedings **1942**, 050107 (2018);
<https://doi.org/10.1063/1.5028738>

SHOW ABSTRACT

 No Access . April 2018

Oxidation behaviour of Fe-Ni alloy nanoparticles synthesized by thermal plasma route

Neha Ghodke, Shalaka Kamble, Suyog Raut,
Shridhar Puranik, S. V. Bhoraskar, Sudhindra
Rayaprol and V. L. MatheAIP Conference Proceedings **1942**, 050108 (2018);
<https://doi.org/10.1063/1.5028739>

SHOW ABSTRACT

 No Access . April 2018

Effect of interparticle

1081 (2008) ✓

1083 (2008) ✓

1078 (2008) ✓

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1063 (2008) ✓

interaction on the plasmon resonance of silver nanoparticles

Durgesh Kar, Prabal Sen, V. Srinivas and S. Kasiviswanathan

AIP Conference Proceedings **1942**, 050109 (2018);
<https://doi.org/10.1063/1.5028740>

SHOW ABSTRACT


 No Access . April 2018

Effects of silicon negative ion implantation in SiO₂

S. B. Vishwakarma, S. K. Dubey, R. L. Dubey, A. Yadav, Vidya Jadhav, V. Bambole, I. Sulania and D. Kanjilal

AIP Conference Proceedings **1942**, 050110 (2018);
<https://doi.org/10.1063/1.5028741>

SHOW ABSTRACT

 No Access . April 2018

Determination of shift in energy of band edges and band gap of ZnSe spherical quantum dot

Dutem Siboh, Pradip Kumar Kalita, Jayanta Kumar Sarma and Nayan Mani Nath

AIP Conference Proceedings **1942**, 050111 (2018);
<https://doi.org/10.1063/1.5028742>

1065 (2008) ✓

SHOW ABSTRACT

1058 (2008) ✓

1064 (2008) ✓

1051 (2008) ✓

1061 (2008) ✓

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1057 (2008) ✓

1050 (2008) ✓

1047 (2008) ✓

1049 (2008) ✓

1046 (2008) ✓

1044 (2008) ✓

 No Access . April 2018

Synthesis of parallel and antiparallel core-shell triangular nanoparticles

Gourab Bhattacharjee and Biswarup Satpati

AIP Conference Proceedings **1942**, 050112 (2018);
<https://doi.org/10.1063/1.5028743>


SHOW ABSTRACT

 No Access . April 2018

MnMoO₄ nanolayers : Synthesis characterizations and electrochemical detection of QA

S. Muthamizh, S. Praveen Kumar, S. Munusamy
and V. NarayananAIP Conference Proceedings **1942**, 050113 (2018);
<https://doi.org/10.1063/1.5028744>

SHOW ABSTRACT

 No Access . April 2018

CuO mesostructures as ammonia sensors

Bhuvaneshwari S. and N. Gopalakrishnan

AIP Conference Proceedings **1942**, 050114 (2018);

1045 (2008) ✓


<https://doi.org/10.1063/1.5028745>

1043 (2008) ✓

SHOW ABSTRACT

1041 (2008) ✓

1048 (2008) ✓

 No Access . April 2018

1030 (2008) ✓

Structural variation study of cobalt nanoparticles synthesized by co-precipitation method using ^{59}Co NMR

1038 (2008) ✓

Manjunatha M., Rajeev Kumar, Siddesh B. M.,
Balaram Sahoo, R. Damle and K. P. Ramesh

1042 (2008) ✓

AIP Conference Proceedings **1942**, 050115 (2018);
<https://doi.org/10.1063/1.5028746>

1040 (2008) ✓


1039 (2008) ✓

1036 (2008) ✓

SHOW ABSTRACT

1033 (2008) ✓

1032 (2008) ✓

 No Access . April 2018

1037 (2008) ✓

Highly conducting p-type nanocrystalline silicon thin films preparation without additional hydrogen dilution

1034 (2008) ✓

Chandralina Patra and Debajyoti Das

1035 (2008) ✓


AIP Conference Proceedings **1942**, 050116 (2018);
<https://doi.org/10.1063/1.5028747>

1029 (2008) ✓

1031 (2008) ✓

SHOW ABSTRACT

1020 (2008) ✓

 No Access . April 2018

1027 (2008) ✓

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1016 (2008) ✓

1017 (2008) ✓

1014 (2008) ✓

1013 (2008) ✓

1015 (2008) ✓


1012 (2008) ✓

Structural mechanical and antibacterial properties of HPMC/SF-AgNPs nanocomposite films

K. V. Harish, B. Lakshmeesha Rao, S. Asha, C. Vipin and Y. Sangappa

AIP Conference Proceedings **1942**, 050117 (2018);
<https://doi.org/10.1063/1.5028748>

SHOW ABSTRACT

 No Access . April 2018

Experimental observation of Fano effect in Ag nanoparticle-CdTe quantum dot hybrid system

Sabina Gurung, J. Jayabalan, Asha Singh, Salahuddin Khan and Rama Chari

AIP Conference Proceedings **1942**, 050118 (2018);
<https://doi.org/10.1063/1.5028749>



SHOW ABSTRACT

 No Access . April 2018




Comparitive study of fluorescence lifetime quenching of rhodamine 6G by MoS₂ and Au-MoS₂

Jyoti Shakya, Parath Kasana and T. Mohanty


AIP Conference Proceedings **1942**, 050119 (2018);

1007 (2008) <https://doi.org/10.1063/1.5028750>1009 (2008) 





SHOW ABSTRACT

1008 (2008) 1011 (2008)  No Access . April 2018




Structural, optical and enhanced power filtering application of PEG capped Zn_{1-x}Co_xS quantum dots

997 (2008) 


T. V. Vineeshkumar, S. Prasanth, R. Pragash, N. V. Unnikrishnan and C. Sudarsanakumar

1003 (2008) AIP Conference Proceedings **1942**, 050120 (2018);
<https://doi.org/10.1063/1.5028751>1004 (2008) 1006 (2008) 1005 (2008) 





SHOW ABSTRACT

992 (2008) 999 (2008)  No Access . April 2018




Latent track formation in swift heavy ion irradiated MoS₂ nanosheets

1002 (2008) 

Sanjeev Kumar, Jyoti Shakya, Tanmay Mahanta and Tanuja Mohanty

996 (2008) AIP Conference Proceedings **1942**, 050121 (2018);
<https://doi.org/10.1063/1.5028752>1001 (2008) 995 (2008) 998 (2008) 

SHOW ABSTRACT

994 (2008) 993 (2008)  No Access . April 2018

Femtosecond nonlinear


- 989 (2008) ✓
- 985 (2008) ✓
- 991 (2008) ✓
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- 990 (2008) ✓
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- 973 (2008) ✓
- 978 (2008) ✓
- 980 (2008) ✓
- 974 (2008) ✓

optical properties of laser ablated gold nanoparticles in water

K. N. Krishnakanth, M. S. S. Bharathi, S. Hamad and S. Venugopal Rao

AIP Conference Proceedings **1942**, 050122 (2018);
<https://doi.org/10.1063/1.5028753>

SHOW ABSTRACT

 No Access . April 2018

Silicon nanostructure arrays prepared by single step metal assisted chemical etching from single crystal wafer

Kalyan Sarkar and Debajyoti Das

AIP Conference Proceedings **1942**, 050123 (2018);
<https://doi.org/10.1063/1.5028754>

SHOW ABSTRACT

 No Access . April 2018

Structural and magnetic characterizations of Co₂FeGa/SiO₂ nanoparticles prepared via chemical route

Priyanka and Rajendra S. Dhaka

AIP Conference Proceedings **1942**, 050124 (2018);
<https://doi.org/10.1063/1.5028755>

971 (2008) ✓

SHOW ABSTRACT

972 (2008) ✓

976 (2008) ✓

969 (2008) ✓

970 (2008) ✓

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960 (2007) ✓

958 (2007) ✓

957 (2007) ✓

964 (2007) ✓

 No Access . April 2018

CdS decorated rGO containing PVDF electrospun fiber based piezoelectric nanogenerator for mechanical energy harvesting application

Krittish Roy and Dipankar Mandal

AIP Conference Proceedings **1942**, 050125 (2018);
<https://doi.org/10.1063/1.5028756>

SHOW ABSTRACT

 No Access . April 2018

Study of magnetofluidic laser scattering under rotating magnetic field












Chintamani Pai, M. Shalini, Vijaykumar B. Varma, S. Radha, R. Nagarajan and Raju V. Ramanujan

AIP Conference Proceedings **1942**, 050126 (2018);
<https://doi.org/10.1063/1.5028757>

SHOW ABSTRACT

 No Access . April 2018

Low temperature synthesis of coiled carbon nanotubes and their magnetic properties

- 959 (2007) 
- 956 (2007) 
- 954 (2007) 
- 951 (2007) 
- 948 (2007) 
- 944 (2007) 
- 950 (2007) 
- 953 (2007) 
- 952 (2007) 
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- 947 (2007) 
- 949 (2007) 
- 943 (2007) 
- 946 (2007) 
- 941 (2007) 
- 942 (2007) 
- 937 (2007) 
- 939 (2007) 

Vemula Mohana Krishna, T. Somanathan and E. Manikandan

AIP Conference Proceedings **1942**, 050127 (2018);
<https://doi.org/10.1063/1.5028758>

SHOW ABSTRACT

 No Access . April 2018

Highly crumpled solar reduced graphene oxide electrode for supercapacitor application

Mohanapriya K., Dinesh J. Ahirrao and Neetu Jha

AIP Conference Proceedings **1942**, 050128 (2018);
<https://doi.org/10.1063/1.5028759>

SHOW ABSTRACT

 No Access . April 2018

Synthesis of MoS₂/rGO nanosheets hybrid materials for enhanced visible light assisted photocatalytic activity

Shreyasi Pal, Shibsankar Dutta and Sukanta De

AIP Conference Proceedings **1942**, 050129 (2018);
<https://doi.org/10.1063/1.5028760>

SHOW ABSTRACT

938 (2007) ✓

933 (2007) ✓

931 (2007) ✓

935 (2007) ✓

940 (2007) ✓

934 (2007) ✓

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928 (2007) ✓

925 (2007) ✓


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921 (2007) ✓


 No Access . April 2018

Improved ferroelectric and photoluminescence properties in Pr³⁺ substituted Na_{0.5}Bi_{0.5}TiO₃ synthesized using hydrothermal route

Cilaveni Goutham, Kumara Raja Kandula, Sai Santhosh Kumar Raavi and Saket Asthana

AIP Conference Proceedings **1942**, 050130 (2018);
<https://doi.org/10.1063/1.5028761>

SHOW ABSTRACT


 No Access . April 2018

Visible light driven photocatalytic degradation of methylene blue using novel camphor sulfonic acid doped polycarbazole/g-C₃N₄ nanocomposite

P. Praveena, S. Dhanavel, D. Sangamithirai, V. Narayanan and A. Stephen

AIP Conference Proceedings **1942**, 050131 (2018);
<https://doi.org/10.1063/1.5028762>

SHOW ABSTRACT

 No Access . April 2018

Ag nanodots decorated SiO₂ coated ZnO core-shell


- 920 (2007) ✓
- 919 (2007) ✓
- 910 (2007) ✓
- 918 (2007) ✓
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- 908 (2007) ✓
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- 905 (2007) ✓
- 899 (2007) ✓
- 903 (2007) ✓
- 904 (2007) ✓

nanostructure with enhanced luminescence property as potential imaging agent

Jagriti Gupta, K. C. Barick, P. A. Hassan and Dhirendra Bahadur

AIP Conference Proceedings **1942**, 050132 (2018);
<https://doi.org/10.1063/1.5028763>

SHOW ABSTRACT


 No Access . April 2018

Temperature stimulates charge carriers in $\text{Ce}_{0.90}\text{Fe}_{0.1}\text{O}_2$ for semiconductor to metal phase

Mubeena Parveen, G. Saravanan, V. Asvini, K. Ravichandran and D. Kalaiselvi

AIP Conference Proceedings **1942**, 050133 (2018);
<https://doi.org/10.1063/1.5028764>


SHOW ABSTRACT

 No Access . April 2018



















Study of structural and magnetic properties of Mn-doped TiO_2 nanoparticles

B. Bharati and Chandana Rath

AIP Conference Proceedings **1942**, 050134 (2018);
<https://doi.org/10.1063/1.5028765>

893 (2007) 

SHOW ABSTRACT


907 (2007) 901 (2007) 900 (2007) 902 (2007) 897 (2007) 895 (2007) 894 (2007) 898 (2007) 896 (2007) 892 (2007) 891 (2007) 890 (2007) 889 (2007) 888 (2007) 884 (2007) 885 (2007) 887 (2007)  No Access . April 2018

Correlation between thermoluminescence glow curve and emission spectra of gamma ray irradiated LaAlO_3

N. J. Shivaramu, B. N. Lakshminarasappa, K. R. Nagabhushana, E. Coetsee and H. C. Swart

AIP Conference Proceedings **1942**, 050135 (2018);
<https://doi.org/10.1063/1.5028766>

SHOW ABSTRACT


 No Access . April 2018

Investigation of local ferroelectric and piezoelectric effects on mats of electrospun poly(vinylidene fluoride) (PVDF) fibers





P. Durgaprasad and J. Hemalatha

AIP Conference Proceedings **1942**, 050136 (2018);
<https://doi.org/10.1063/1.5028767>

SHOW ABSTRACT

 No Access . April 2018

Relation between textured surface and diffuse


- 886 (2007) 
- 882 (2007) 
- 883 (2007) 
- 880 (2007) 
- 879 (2007) 
- 881 (2007) 
- 875 (2006) 
- 876 (2006) 
- 871 (2006) 
- 873 (2006) 
- 872 (2006) 
- 878 (2006) 
- 877 (2006) 
- 874 (2006) 
- 868 (2006) 
- 870 (2006) 
- 864 (2006) 
- 866 (2006) 

reflectance of Cu films

Gaurav Shukla and S. Angappane

AIP Conference Proceedings **1942**, 050137 (2018);
<https://doi.org/10.1063/1.5028768>

SHOW ABSTRACT

 No Access . April 2018

MoS₂ embedded TiO₂ nanoparticles for concurrent role of adsorption and photocatalysis

Arnab Pal, Tushar K. Jana and Kuntal Chatterjee

AIP Conference Proceedings **1942**, 050138 (2018);
<https://doi.org/10.1063/1.5028769>

SHOW ABSTRACT

 No Access . April 2018

Water soluble (Ln³⁺) doped nanoparticle: Retention of strong luminescence

Tarannum Vahid Attar and Mahendra M. Khandpekar

AIP Conference Proceedings **1942**, 050139 (2018);
<https://doi.org/10.1063/1.5028770>


SHOW ABSTRACT

869 (2006) ✓

CONTRIBUTED PAPERS D.
**Experimental Techniques and
Devices**

861 (2006) ✓

865 (2006) ✓

 No Access . April 2018

867 (2006) ✓

**Solution-processed
nanocrystalline PbS on paper
substrate with pencil traced
electrodes as visible
photodetector**

862 (2006) ✓

Dhaval Vankhade and Tapas K. Chaudhuri

863 (2006) ✓

AIP Conference Proceedings **1942**, 060001 (2018);
<https://doi.org/10.1063/1.5028771>


860 (2006) ✓

859 (2006) ✓

SHOW ABSTRACT

858 (2006) ✓

857 (2006) ✓

 No Access . April 2018

855 (2006) ✓

**Indigenous unit for bending
and twisting tests of ultra-
thin films on a flexible
substrate**

856 (2006) ✓

Slavia Deeksha D'souza, Pratim Hazarika, Ch Surya
Prakasarao, M. Kovendhan, R. Arockia Kumar and
D. Paul Joseph

854 (2006) ✓

AIP Conference Proceedings **1942**, 060002 (2018);
<https://doi.org/10.1063/1.5028772>

850 (2006) ✓


848 (2006) ✓

851 (2006) ✓

SHOW ABSTRACT

852 (2006) ✓

853 (2006) ✓

 No Access . April 2018


- 849 (2006) ▼
- 845 (2006) ▼
- 847 (2006) ▼
- 842 (2006) ▼
- 846 (2006) ▼
- 844 (2006) ▼
- 843 (2006) ▼
- 841 (2006) ▼
- 840 (2006) ▼
- 839 (2006) ▼
- 838 (2006) ▼
- 837 (2006) ▼
- 836 (2006) ▼
- 833 (2006) ▼
- 835 (2006) ▼
- 829 (2006) ▼
- 832 (2006) ▼
- 834 (2006) ▼

Effect of lithium doping in BaTiO₃ ceramics for vibration sensor application

E. Praveen, S. Murugan and K. Jayakumar

AIP Conference Proceedings **1942**, 060003 (2018);
<https://doi.org/10.1063/1.5028773>

SHOW ABSTRACT

 No Access . April 2018

Resonant Rutherford backscattering spectrometric analysis on ion beam reduced graphene oxide

K. Saravanan, B. Sundaravel and B. K. Panigrahi

AIP Conference Proceedings **1942**, 060004 (2018);
<https://doi.org/10.1063/1.5028774>

SHOW ABSTRACT

830 (2006) ✓

823 (2006) ✓

831 (2006) ✓

828 (2006) ✓

827 (2006) ✓

824 (2006) ✓

826 (2006) ✓

825 (2006) ✓

822 (2006) ✓

821 (2006) ✓

819 (2006) ✓

820 (2006) ✓

816 (2006) ✓


818 (2006) ✓

814 (2006) ✓

815 (2006) ✓

817 (2006) ✓

813 (2006) ✓

 No Access . April 2018

Analysis and optimal design of moisture sensor for rice grain moisture measurement

Sweety Jain, Pankaj Kumar Mishra and Vandana Vikas Thakare

AIP Conference Proceedings **1942**, 060005 (2018);
<https://doi.org/10.1063/1.5028775>

SHOW ABSTRACT


 No Access . April 2018

NO₂ sensing at room temperature using vertically aligned MoS₂ flakes network

Rahul Kumar, Neeraj Goel and Mahesh Kumar

AIP Conference Proceedings **1942**, 060006 (2018);
<https://doi.org/10.1063/1.5028776>

SHOW ABSTRACT

 No Access . April 2018

Electrical behaviour of fully solution processed HfO₂ (MOS) in presence of different light illumination

Sandip Mondal

AIP Conference Proceedings **1942**, 060007 (2018);
<https://doi.org/10.1063/1.5028777>

812 (2006) ✓

SHOW ABSTRACT

806 (2006) ✓

811 (2006) ✓

809 (2006) ✓

808 (2006) ✓

810 (2006) ✓

807 (2006) ✓

805 (2005) ✓

804 (2005) ✓

803 (2005) ✓

801 (2005) ✓

802 (2005) ✓

800 (2005) ✓


798 (2005) ✓

799 (2005) ✓

796 (2005) ✓

797 (2005) ✓

793 (2005) ✓


 No Access . April 2018

Mixed-mode oscillations in memristor emulator based Liénard system

S. Leo Kingston, K. Suresh and K. Thamilmaran

AIP Conference Proceedings **1942**, 060008 (2018);
<https://doi.org/10.1063/1.5028778>

SHOW ABSTRACT


 No Access . April 2018

Pre-concentration technique for reduction in “Analytical instrument requirement and analysis”

Sangita Pal, Mousumi Singha and Sher Singh Meena

AIP Conference Proceedings **1942**, 060009 (2018);
<https://doi.org/10.1063/1.5028779>

SHOW ABSTRACT

 No Access . April 2018

DPASV analytical technique for ppb level uranium analysis

Sangita Pal, Mousumi Singha and Sher Singh Meena

795 (2005) ✓


AIP Conference Proceedings **1942**, 060010 (2018);
<https://doi.org/10.1063/1.5028780>

791 (2005) ✓

794 (2005) ✓

SHOW ABSTRACT

792 (2005) ✓

 No Access . April 2018

784 (2005) ✓

**Fabrication of InP-pentacene
inorganic-organic hybrid
heterojunction using MOCVD
grown InP for photodetector
application**

786 (2005) ✓

787 (2005) ✓

Kalyan Jyoti Sarkar, B. Pal and P. Banerji

790 (2005) ✓

AIP Conference Proceedings **1942**, 060011 (2018);
<https://doi.org/10.1063/1.5028781>


789 (2005) ✓

788 (2005) ✓

SHOW ABSTRACT

785 (2005) ✓

780 (2005) ✓

 No Access . April 2018

778 (2005) ✓

**Neutron beam flux monitors in
coaxial and planar geometry
for neutron scattering
instruments at Dhruva reactor**

783 (2005) ✓

782 (2005) ✓

Shraddha S. Desai, Shylaja Devan, Amrita Das, S.
M. Patkar and Mala N. Rao

781 (2005) ✓

AIP Conference Proceedings **1942**, 060012 (2018);
<https://doi.org/10.1063/1.5028782>

779 (2005) ✓

777 (2005) ✓

SHOW ABSTRACT

772 (2005) ✓

776 (2005) ✓

775 (2005) ✓

774 (2005) ✓

773 (2005) ✓

771 (2005) ✓

769 (2005) ✓

762 (2005) ✓

768 (2005) ✓

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766 (2005) ✓

765 (2005) ✓

767 (2005) ✓


759 (2005) ✓

756 (2005) ✓

761 (2005) ✓

760 (2005) ✓

763 (2005) ✓


 No Access . April 2018

Photoluminescent properties of Pr³⁺ doped YTiAO₆ (A= Nb&Ta) euxenite compounds

Meenu Venugopal and H. Padma Kumar

AIP Conference Proceedings 1942, 060013 (2018);
<https://doi.org/10.1063/1.5028783>

SHOW ABSTRACT


 No Access . April 2018

Effect of aging on the piezoelectric properties of sol-gel derived lead-free BCZT ceramics

E. Chandrakala, Binoy Krishna Hazra, J. Paul Praveen and Dibakar Das

AIP Conference Proceedings 1942, 060014 (2018);
<https://doi.org/10.1063/1.5028784>

SHOW ABSTRACT

 No Access . April 2018

Improved electron injection in spin coated Alq₃ incorporated ZnO thin film in the device for solution processed OLEDs

Gnyaneshwar Dasi, R. Ramarajan and Kuppusamy Thangaraju

AIP Conference Proceedings 1942, 060015 (2018);

764 (2005) ✓


<https://doi.org/10.1063/1.5028785>

758 (2005) ✓

SHOW ABSTRACT

757 (2005) ✓

755 (2005) ✓

 No Access . April 2018

Design and development of multilayer wideband antireflection coating and its annealing study

754 (2005) ✓

752 (2005) ✓

S. Jena, R. B. Tokas, D. V. Udupa, S. Thakur and N. K. Sahoo

753 (2005) ✓

AIP Conference Proceedings **1942**, 060016 (2018);
<https://doi.org/10.1063/1.5028786>


748 (2005) ✓

751 (2005) ✓

SHOW ABSTRACT

749 (2005) ✓

745 (2005) ✓

 No Access . April 2018

Waste to wealth concept: Disposable RGO filter paper for flexible temperature sensor applications

750 (2005) ✓

747 (2005) ✓

Nagarjuna Neella, Vaishakh Kedambaimoole, Venkateswarlu Gaddam, M. M. Nayak and K. Rajanna

746 (2005) ✓

744 (2004) ✓

AIP Conference Proceedings **1942**, 060017 (2018);
<https://doi.org/10.1063/1.5028787>

743 (2004) ✓

742 (2004) ✓

SHOW ABSTRACT

741 (2004) ✓

737 (2004) ✓

739 (2004) ✓

740 (2004) ✓

738 (2004) ✓

728 (2004) ✓

736 (2004) ✓

735 (2004) ✓

734 (2004) ✓

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732 (2004) ✓

731 (2004) ✓

730 (2004) ✓

721 (2004) ✓


729 (2004) ✓

724 (2004) ✓

723 (2004) ✓

727 (2004) ✓

719 (2004) ✓


 No Access . April 2018

Feasibility study on measurement of magnetocardiography (MCG) using fluxgate magnetometer

S. Sengottuvel, Akash Sharma, Deepak Biswal, Pathan Fayaz Khan, Pragyna Parimita Swain, Rajesh Patel and K. Gireesan

AIP Conference Proceedings 1942, 060018 (2018); <https://doi.org/10.1063/1.5028788>

SHOW ABSTRACT


 No Access . April 2018

Low temperature synthesis & characterization of lead-free BCZT ceramics using molten salt method

Jai Shree K., E. Chandrakala and Dibakar Das

AIP Conference Proceedings 1942, 060019 (2018); <https://doi.org/10.1063/1.5028789>

SHOW ABSTRACT

 No Access . April 2018

Cross correlation measurement of low frequency conductivity noise

Aditya Kumar Jain, Himanshu Nigudkar, Himadri Chakraborti, Aditi Udupa and Kantimay Das Gupta

722 (2004) ✓


AIP Conference Proceedings **1942**, 060020 (2018);
<https://doi.org/10.1063/1.5028790>

726 (2004) ✓

725 (2004) ✓

SHOW ABSTRACT

720 (2004) ✓

 No Access . April 2018

717 (2004) ✓

A novel low cost pulse excitation source to study trap spectroscopy of persistent luminescent materials

716 (2004) ✓

715 (2004) ✓

718 (2004) ✓

Ngangbam Chandrasekhar, Nungleppam
Monorajan Singh and R. K. Gartia

706 (2004) ✓


AIP Conference Proceedings **1942**, 060021 (2018);
<https://doi.org/10.1063/1.5028791>

714 (2004) ✓

SHOW ABSTRACT

711 (2004) ✓

713 (2004) ✓

 No Access . April 2018

710 (2004) ✓

Improved diode performance of Ag nanoparticle dispersed Er doped In₂O₃ film

712 (2004) ✓

705 (2004) ✓

Anupam Ghosh, Shyam Murli Manohar Dhar
Dwivedi, Shubhro Chakrabartty and Aniruddha
Mondal

709 (2004) ✓

AIP Conference Proceedings **1942**, 060022 (2018);
<https://doi.org/10.1063/1.5028792>

708 (2004) ✓

707 (2004) ✓

SHOW ABSTRACT

704 (2004) ✓

703 (2004) ✓

702 (2004) ✓

701 (2004) ✓

700 (2004) ✓

698 (2004) ✓

699 (2004) ✓

697 (2003) ✓

696 (2003) ✓

695 (2003) ✓

693 (2003) ✓

694 (2003) ✓

692 (2003) ✓


691 (2003) ✓

690 (2003) ✓

688 (2003) ✓

687 (2003) ✓

689 (2003) ✓


 No Access . April 2018

Resistive switching characteristics of thermally oxidized TiN thin films

K. P. Biju

AIP Conference Proceedings **1942**, 060023 (2018);
<https://doi.org/10.1063/1.5028793>

SHOW ABSTRACT


 No Access . April 2018

Setting up Z-scan experiment to study nonlinear optical properties of polymer composites: Characterization of ADP doped PVA/PVP polymer films

G. K. Gowtham, H. Somashekarappa, C. K. Raman Namboodiri and R. Somashekar

AIP Conference Proceedings **1942**, 060024 (2018);
<https://doi.org/10.1063/1.5028794>

SHOW ABSTRACT

 No Access . April 2018

Memristor emulator causes dissimilarity on a coupled memristive systems

S. Sabarathinam and Awadhesh Prasad

685 (2003) ✓


AIP Conference Proceedings 1942, 060025 (2018);
<https://doi.org/10.1063/1.5028795>

686 (2003) ✓

683 (2003) ✓

SHOW ABSTRACT

684 (2003) ✓

 No Access . April 2018

681 (2003) ✓

A two-coil mutual inductance technique to study the conductivity of metal and measurement of the superconducting transient temperature

682 (2003) ✓

Amit Jash, Nirmal Roy, Biplab Bag and S. S. Banerjee

679 (2003) ✓

AIP Conference Proceedings 1942, 060026 (2018);
<https://doi.org/10.1063/1.5028796>

680 (2003) ✓

678 (2003) ✓


SHOW ABSTRACT

677 (2003) ✓

676 (2003) ✓

675 (2003) ✓

671 (2003) ✓

 No Access . April 2018

674 (2003) ✓

Surface smoothening effects on growth of diamond films

673 (2003) ✓

Bilal Ahmad Reshi, Shyam Kumar, Moses J. Kartha and Raghava Varma

672 (2003) ✓

AIP Conference Proceedings 1942, 060027 (2018);
<https://doi.org/10.1063/1.5028797>

670 (2003) ✓

SHOW ABSTRACT

669 (2003) ✓

668 (2003) ✓

665 (2003) ✓

666 (2003) ✓

667 (2003) ✓

664 (2003) ✓

663 (2003) ✓

662 (2003) ✓

661 (2003) ✓

660 (2003) ✓

659 (2003) ✓

657 (2003) ✓

658 (2003) ✓

656 (2003) ✓


655 (2003) ✓

654 (2003) ✓

653 (2003) ✓

652 (2003) ✓

651 (2002) ✓

 No Access . April 2018


Magnetostriction measurement by four probe method

S. N. Dange and S. Radha

AIP Conference Proceedings **1942**, 060028 (2018);
<https://doi.org/10.1063/1.5028798>

SHOW ABSTRACT

CONTRIBUTED PAPERS E. Glasses and Amorphous Systems


 No Access . April 2018

Crystallization and dielectric properties of PbTiO₃ based glass ceramics

J. Shankar, G. Neeraja Rani and V. K. Deshpande

AIP Conference Proceedings **1942**, 070001 (2018);
<https://doi.org/10.1063/1.5028799>

SHOW ABSTRACT

 No Access . April 2018

Enhanced frequency upconversion study in Er³⁺/Yb³⁺ doped/codoped TWTi glasses

Mohd Azam and Vineet Kumar Rai

648 (2002) ✓


AIP Conference Proceedings **1942**, 070002 (2018);
<https://doi.org/10.1063/1.5028800>

650 (2002) ✓

649 (2002) ✓

SHOW ABSTRACT

647 (2002) ✓

 No Access . April 2018

645 (2002) ✓

Efficient upconversion emission in $\text{Ho}^{3+}/\text{Nd}^{3+}$ co-doped oxyfluorosilicate glasses

642 (2002) ✓

G. Devarajulu and B. Deva Prasad Raju

646 (2002) ✓

644 (2002) ✓


AIP Conference Proceedings **1942**, 070003 (2018);
<https://doi.org/10.1063/1.5028801>

643 (2002) ✓

SHOW ABSTRACT

641 (2002) ✓

640 (2002) ✓

 No Access . April 2018

639 (2002) ✓

Spectroscopic investigations on Pr^{3+} ions doped lead telluro-borate glasses for photonic applications

638 (2002) ✓

P. Suthanthirakumar, M. Mariyappan and K. Marimuthu

637 (2002) ✓

636 (2002) ✓


AIP Conference Proceedings **1942**, 070004 (2018);
<https://doi.org/10.1063/1.5028802>

635 (2002) ✓

634 (2002) ✓

SHOW ABSTRACT

633 (2002) ✓

 No Access . April 2018


- 631 (2002) ✓
- 632 (2002) ✓
- 629 (2002) ✓
- 628 (2002) ✓
- 627 (2002) ✓
- 630 (2002) ✓
- 625 (2002) ✓
- 626 (2002) ✓
- 624 (2002) ✓
- 623 (2002) ✓
- 620 (2002) ✓
- 622 (2002) ✓
- 621 (2002) ✓
- 619 (2002) ✓
- 615 (2002) ✓
- 618 (2002) ✓
- 614 (2002) ✓
- 617 (2002) ✓

Structural and electrical characterization of tamarind seed polysaccharide (TSP) doped with NH_4HCO_2

M. Premalatha, T. Mathavan, S. Selvasekarapandian and S. Selvalakshmi

AIP Conference Proceedings **1942**, 070005 (2018);
<https://doi.org/10.1063/1.5028803>

SHOW ABSTRACT


 No Access . April 2018

Magnetic properties of Fe-Nd silica glass ceramics

Manjunath T. Nayak, J. A. Erwin Desa and P. D. Babu

AIP Conference Proceedings **1942**, 070006 (2018);
<https://doi.org/10.1063/1.5028804>

SHOW ABSTRACT

 No Access . April 2018

Calcium titanium silicate based glass-ceramic for nuclear waste immobilisation

K. Sharma, A. P. Srivastav, M. Goswami and Madangopal Krishnan

AIP Conference Proceedings **1942**, 070007 (2018);
<https://doi.org/10.1063/1.5028805>

613 (2002) ✓

SHOW ABSTRACT

616 (2002) ✓

612 (2002) ✓

611 (2002) ✓

610 (2002) ✓

609 (2002) ✓

605 (2002) ✓

607 (2002) ✓

606 (2002) ✓

608 (2002) ✓

604 (2002) ✓

603 (2001) ✓

602 (2001) ✓


600 (2001) ✓

599 (2001) ✓

598 (2001) ✓

597 (2001) ✓

601 (2001) ✓


 No Access . April 2018

Dielectric study of chalcogenide $(\text{Se}_{80}\text{Te}_{20})_{94}\text{Ge}_6$ glass

Neha Sharma, Balbir Singh Patial and Nagesh Thakur

AIP Conference Proceedings **1942**, 070008 (2018);
<https://doi.org/10.1063/1.5028806>

SHOW ABSTRACT


 No Access . April 2018

Conductivity measurements on CdCl_2 doped PVA solid polymeric electrolyte for battery application

Basavarajeshwari M. Baraker and Blaise Lobo

AIP Conference Proceedings **1942**, 070009 (2018);
<https://doi.org/10.1063/1.5028807>

SHOW ABSTRACT

 No Access . April 2018

Ag-doped Lithium alumino silicate photostructurable glass for microdevice fabrication

596 (2001) ✓

Richa Mishra, Madhumita Goswami and
Madangopal Krishnan

591 (2001) ✓


AIP Conference Proceedings 1942, 070010 (2018);
<https://doi.org/10.1063/1.5028808>

595 (2001) ✓

SHOW ABSTRACT

594 (2001) ✓

593 (2001) ✓

 No Access . April 2018

592 (2001) ✓

Electron paramagnetic resonance spectra of CdO- Al₂O₃-Bi₂O₃-B₂O₃ quaternary glasses containing VO²⁺ ions

590 (2001) ✓

A. V. Lalithaphani, B. Srinivas, Abdul Hameed, M.
Narasimha Chary and Md. Shareefuddin

586 (2001) ✓

AIP Conference Proceedings 1942, 070011 (2018);
<https://doi.org/10.1063/1.5028809>

587 (2001) ✓


589 (2001) ✓

SHOW ABSTRACT

588 (2001) ✓

585 (2001) ✓

584 (2001) ✓

 No Access . April 2018

Lanthanum lead boro-tellurite glasses doped with samarium trioxide for luminescent devices application

583 (2001) ✓

A. Madhu and B. Eraiah

571 (2001) ✓

AIP Conference Proceedings 1942, 070012 (2018);
<https://doi.org/10.1063/1.5028810>

581 (2001) ✓

582 (2001) ✓

SHOW ABSTRACT

580 (2001) ✓

579 (2001) ✓

576 (2001) ✓

578 (2001) ✓

577 (2001) ✓

572 (2001) ✓

573 (2001) ✓

575 (2001) ✓

574 (2001) ✓

570 (2001) ✓

569 (2001) ✓

566 (2001) ✓

568 (2001) ✓

567 (2001) ✓


565 (2001) ✓

557 (2001) ✓

564 (2001) ✓

563 (2001) ✓


562 (2001) ✓

 No Access . April 2018

Physical and optical property studies on Bi³⁺ ion containing vanadium sodium borate glasses

G. Venkatesh, B. N. Meera and B. Eraiah


AIP Conference Proceedings 1942, 070013 (2018);
<https://doi.org/10.1063/1.5028811>

[SHOW ABSTRACT](#) No Access . April 2018

Characterization and spectroscopic studies of multi-component calcium zinc bismuth phosphate glass ceramics doped with iron ions

A. Suneel Kumar, T. Narendrudu, S. Suresh, G. Chinna Ram, M. V. Sambasiva Rao, Ch. Tirupataiah and D. Krishna Rao

AIP Conference Proceedings 1942, 070014 (2018);
<https://doi.org/10.1063/1.5028812>

[SHOW ABSTRACT](#) No Access . April 2018

Synthesis, characterization, bioactivity and antibacterial studies of silver doped calcium borosilicate glass-

- 561 (2001) ✓
- 560 (2001) ✓
- 559 (2001) ✓
- 558 (2001) ✓
- 556 (2001) ✓
- 555 (2001) ✓
- 554 (2001) ✓
- 553 (2001) ✓
- 552 (2001) ✓
- 551 (2001) ✓
- 550 (2001) ✓
- 549 (2000) ✓
- 548 (2000) ✓
- 545 (2000) ✓
- 547 (2000) ✓
- 546 (2000) ✓
- 544 (2000) ✓
- 542 (2000) ✓

ceramics

Alesh Kumar and C. R. Mariappan

AIP Conference Proceedings **1942**, 070015 (2018);
<https://doi.org/10.1063/1.5028813>

SHOW ABSTRACT

 No Access . April 2018

Role of valence state of vanadium ions on structural and spectroscopic properties of sodium lead bismuth silicate glass ceramics

M. V. Sambasiva Rao, Ch. Tirupataiah, A. Suneel Kumar, T. Narendrudu, S. Suresh, G. Chinna Ram and D. Krishna Rao

AIP Conference Proceedings **1942**, 070016 (2018);
<https://doi.org/10.1063/1.5028814>

SHOW ABSTRACT

 No Access . April 2018

Density and mechanical properties of calcium aluminate cement

Syed Taqi Uddin Ahmed and Shaik Kareem Ahmmad

AIP Conference Proceedings **1942**, 070017 (2018);
<https://doi.org/10.1063/1.5028815>

543 (2000) ✓

SHOW ABSTRACT

541 (2000) ✓

537 (2000) ✓

539 (2000) ✓

540 (2000) ✓

538 (2000) ✓

528 (2000) ✓

536 (2000) ✓

535 (2000) ✓

526 (2000) ✓

531 (2000) ✓

533 (2000) ✓

530 (2000) ✓


534 (2000) ✓

524 (2000) ✓

529 (2000) ✓

527 (2000) ✓

532 (2000) ✓


 No Access . April 2018

Investigations on optical properties of Eu^{3+} ion doped magnesium telluroborate glasses for red laser applications

S. Arunkumar, K. Annapoorani and K. Marimuthu

AIP Conference Proceedings **1942**, 070018 (2018);
<https://doi.org/10.1063/1.5028816>

SHOW ABSTRACT


 No Access . April 2018

Optical, structural and thermal properties of bismuth nitrate doped polycarbonate composite

Rajeshwari Mirji and Blaise Lobo

AIP Conference Proceedings **1942**, 070019 (2018);
<https://doi.org/10.1063/1.5028817>

SHOW ABSTRACT

 No Access . April 2018

Structural and optical studies on Sm^{3+} ions doped bismuth fluoroborate glasses for


- 525 (2000) ✓
- 521 (2000) ✓
- 522 (2000) ✓
- 519 (2000) ✓
- 520 (2000) ✓
- 523 (2000) ✓
- 516 (2000) ✓
- 515 (2000) ✓
- 512 (2000) ✓
- 517 (2000) ✓
- 518 (2000) ✓
- 514 (2000) ✓
- 509 (2000) ✓
- 507 (2000) ✓
- 505 (2000) ✓
- 510 (2000) ✓
- 513 (2000) ✓
- 511 (2000) ✓

visible laser applications

M. Mariyappan, P. Suthanthirakumar, S. Arunkumar and K. Marimuthu

AIP Conference Proceedings **1942**, 070020 (2018);
<https://doi.org/10.1063/1.5028818>

SHOW ABSTRACT


 No Access . April 2018

Spectroscopic analysis of lead borate systems

Akash Daniel Georgi, K. P. Ramesh and K. J. Mallikarjunaiah

AIP Conference Proceedings **1942**, 070021 (2018);
<https://doi.org/10.1063/1.5028819>

SHOW ABSTRACT

 No Access . April 2018

Spectroscopic behavior of composition dependent Dy³⁺ doped alkali fluoroborophosphate glasses

V. Anthony Raj, K. Maheshvaran, A. Josuva D'Silva and I. Arul Rayappan

AIP Conference Proceedings **1942**, 070022 (2018);
<https://doi.org/10.1063/1.5028820>

SHOW ABSTRACT

508 (2000) ✓

503 (2000) ✓

506 (2000) ✓

500 (2000) ✓

502 (2000) ✓

501 (2000) ✓

504 (2000) ✓

499 (1999) ✓

498 (1999) ✓

496 (1999) ✓

497 (1999) ✓

494 (1999) ✓

493 (1999) ✓


495 (1999) ✓

492 (1999) ✓

491 (1999) ✓

489 (1999) ✓

490 (1999) ✓


 No Access . April 2018

Effect of molybdenum on gamma ray shielding and structural properties of PbO-B₂O₃ glasses

Mridula Dogra, K. J. Singh and Kulwinder Kaur

AIP Conference Proceedings **1942**, 070023 (2018);
<https://doi.org/10.1063/1.5028821>

SHOW ABSTRACT

 No Access . April 2018

Short range structure of 0.35Sb₂O₃-0.65(Li₂O-P₂O₅) glass: A neutron diffraction study

A. B. Shinde and P. S. R. Krishna











AIP Conference Proceedings **1942**, 070024 (2018);
<https://doi.org/10.1063/1.5028822>

SHOW ABSTRACT

 No Access . April 2018


Optical studies on alkali-alkaline Dy³⁺-doped lead-alumino-boro-phosphate glasses for white LED's application

P. Arun Jeganatha Joseph, J. Jemma Vinothini, K.

487 (1999) 488 (1999) 486 (1999) 485 (1999) 481 (1999) 483 (1999) 478 (1999) 484 (1999) 472 (1999) 482 (1999) 471 (1999) 479 (1999) 477 (1999) 475 (1999) 480 (1999) 476 (1999) 474 (1999) 470 (1999) 

Maheshvaran and I. Arul Rayappan


AIP Conference Proceedings **1942**, 070025 (2018);
<https://doi.org/10.1063/1.5028823>

SHOW ABSTRACT No Access . April 2018

Effect of lithium on thermal and structural properties of zinc vanadate tellurite glass

Sunita Rani, R. S. Kundu, Neetu Ahlawat, Suman Rani, Kanta Maan Sangwan and Navneet Ahlawat


AIP Conference Proceedings **1942**, 070026 (2018);
<https://doi.org/10.1063/1.5028824>

SHOW ABSTRACT No Access . April 2018

On the pressure and temperature dependent ductile, brittle nature of $\text{SmS}_{1-x}\text{Se}_x$ semiconductor

S. Shriya, E. Khan, R. Khenata and Dinesh Varshney

AIP Conference Proceedings **1942**, 070027 (2018);
<https://doi.org/10.1063/1.5028825>

SHOW ABSTRACT No Access . April 2018

473 (1999) ✓

469 (1999) ✓

468 (1999) ✓

466 (1999) ✓

467 (1999) ✓

465 (1999) ✓

463 (1999) ✓

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464 (1999) ✓

462 (1999) ✓

459 (1999) ✓

458 (1999) ✓

457 (1999) ✓

455 (1998) ✓

454 (1998) ✓

453 (1998) ✓


456 (1998) ✓

Structural and thermal properties of vanadium tellurite glasses

Rajinder Kaur, Ramandeep Kaur, Atul Khanna and Fernando González

AIP Conference Proceedings **1942**, 070028 (2018); <https://doi.org/10.1063/1.5028826>

SHOW ABSTRACT

 No Access . April 2018

Crystalline and absorption studies on PMMA/CdS composite using XRD & UV-Vis techniques

Arunendra Kumar Patel, Nidhi Jain, Pooja Patel, Kallol Das and Rakesh Bajpai

AIP Conference Proceedings **1942**, 070029 (2018); <https://doi.org/10.1063/1.5028827>

SHOW ABSTRACT

451 (1998) ✓

449 (1998) ✓

452 (1998) ✓

450 (1998) ✓

448 (1998) ✓

447 (1998) ✓

446 (1998) ✓

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441 (1998) ✓

440 (1998) ✓

439 (1998) ✓


442 (1998) ✓

435 (1998) ✓

438 (1998) ✓

429 (1998) ✓

437 (1998) ✓

 No Access . April 2018

Dynamics of Li⁺ ions in Li₂O-TeO₂-P₂O₅ glasses

A. Chatterjee and A. Ghosh

AIP Conference Proceedings 1942, 070030 (2018);
<https://doi.org/10.1063/1.5028828>

SHOW ABSTRACT

 No Access . April 2018

Conductivity relaxation and charge transport of trihexyl tetradecyl phosphonium dicyanamide ionic liquid by broadband dielectric spectroscopy

Thasneema K. K., M. Shahin Thayyil, Krishna Kumar N. S., Govindaraj G. and V. C. Saheer

AIP Conference Proceedings 1942, 070031 (2018);
<https://doi.org/10.1063/1.5028829>

SHOW ABSTRACT

 No Access . April 2018

The preparation and characterization of silk fibroin blended with low molecular weight hydroxypropyl methylcellulose (HPMC)

434 (1998) ✓

G. Rajesha Shetty, B. Lakshmeesha Rao,
Mahadeva Gowda, C. S. Shivananda, S. Asha and Y.
Sangappa

436 (1998) ✓

AIP Conference Proceedings **1942**, 070032 (2018);
<https://doi.org/10.1063/1.5028830>


433 (1998) ✓

430 (1998) ✓

SHOW ABSTRACT

432 (1998) ✓

428 (1998) ✓

 No Access . April 2018

Photoluminescence properties of LiF bismuth silicate glass

427 (1998) ✓

M. Laya Krishnan and V. V. Ravi Kanth Kumar

431 (1998) ✓

AIP Conference Proceedings **1942**, 070033 (2018);
<https://doi.org/10.1063/1.5028831>


426 (1998) ✓

425 (1998) ✓

SHOW ABSTRACT

424 (1998) ✓

423 (1998) ✓

 No Access . April 2018

Electronic structure of silver doped As_2S_3

422 (1998) ✓

Veerpal Kaur, Swati Khatta, S. K. Tripathi and S.
Prakash

421 (1998) ✓

AIP Conference Proceedings **1942**, 070034 (2018);
<https://doi.org/10.1063/1.5028832>


420 (1998) ✓

419 (1998) ✓

418 (1998) ✓

SHOW ABSTRACT

417 (1997) ✓

 No Access . April 2018


- 416 (1997) ✓
415 (1997) ✓
414 (1997) ✓
413 (1997) ✓
412 (1997) ✓
411 (1997) ✓
410 (1997) ✓
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408 (1997) ✓
407 (1997) ✓
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404 (1997) ✓
403 (1997) ✓
402 (1997) ✓
401 (1997) ✓
400 (1997) ✓
399 (1997) ✓

Optical and vibrational spectroscopy of $\text{Ba}_{0.85}\text{Ca}_{0.15}\text{Zr}_{0.1}\text{Ti}_{0.9}\text{O}_3$ modified lithium borate glass ceramics

Pamarti Viswanath, Sadhu Sai Pavan Prashanth, Muralikrishna Molli, Jaschin Prem Wicram and Sai Muthukumar V.

AIP Conference Proceedings 1942, 070035 (2018); <https://doi.org/10.1063/1.5028833>

SHOW ABSTRACT

 No Access . April 2018


Tb^{3+} and Eu^{3+} doped zinc phosphate glasses for solid state lighting applications

Kaushal Jha, Amit K. Vishwakarma, M. Jayasimhadri, D. Haranath and Kiwan Jang

AIP Conference Proceedings 1942, 070036 (2018); <https://doi.org/10.1063/1.5028834>

SHOW ABSTRACT

CONTRIBUTED PAPERS F. Surfaces, Interfaces and Thin films

 No Access . April 2018

Understanding interaction of curcumin and metal ions on electrode surfaces using


- 398 (1997) ∨
- 397 (1997) ∨
- 396 (1997) ∨
- 395 (1997) ∨
- 394 (1997) ∨
- 393 (1997) ∨
- 392 (1997) ∨
- 391 (1997) ∨
- 390 (1997) ∨
- 389 (1997) ∨
- 388 (1997) ∨
- 387 (1997) ∨
- 386 (1997) ∨
- 385 (1997) ∨
- 384 (1996) ∨
- 383 (1996) ∨
- 382 (1996) ∨
- 381 (1996) ∨

EDXRF

Daisy Joseph, K. Krishna Kumar and S. Sriman Narayanan

AIP Conference Proceedings **1942**, 080001 (2018);
<https://doi.org/10.1063/1.5028835>

SHOW ABSTRACT

 No Access . April 2018

Doping induced *c*-axis oriented growth of transparent ZnO thin film

Bhaumik V. Mistry and U. S. Joshi

AIP Conference Proceedings **1942**, 080002 (2018);
<https://doi.org/10.1063/1.5028836>

SHOW ABSTRACT

 No Access . April 2018

Lattice location of Cr in Cr⁺ ion implanted BCC Fe(100) by particle induced x-ray emission and channeling

M. Vairavel, K. Saravanan and B. Sundaravel

AIP Conference Proceedings **1942**, 080003 (2018);
<https://doi.org/10.1063/1.5028837>

SHOW ABSTRACT

380 (1996) ✓

379 (1996) ✓

378 (1996) ✓

377 (1996) ✓

376 (1996) ✓

375 (1996) ✓

374 (1996) ✓

373 (1996) ✓

372 (1996) ✓

371 (1996) ✓

370 (1996) ✓

369 (1996) ✓

368 (1996) ✓


367 (1996) ✓

366 (1996) ✓

365 (1996) ✓

364 (1996) ✓

363 (1996) ✓


 No Access . April 2018

Inhibition and quenching effect on positronium formation in metal salt doped polymer blend

S. D. Praveena, V. Ravindrachary, Ismayil, R. F. Bhajantri, A. Harisha, B. Guruswamy, Shreedatta Hegde and Rohan N. Sagar

AIP Conference Proceedings **1942**, 080004 (2018); <https://doi.org/10.1063/1.5028838>

SHOW ABSTRACT


 No Access . April 2018

Effects of ZnO incorporation on PSF-PEG mixed matrix membrane

P. Pramila and N. Gopalakrishnan

AIP Conference Proceedings **1942**, 080005 (2018); <https://doi.org/10.1063/1.5028839>

SHOW ABSTRACT

 No Access . April 2018

Optical, electrical properties and structural characterization of ZnO:rGO based photodetector

Debarati Nath, S. K. Mandal, Debajit Deb, J. K. Rakshit, P. Dey and J. N. Roy

362 (1996) ✓


AIP Conference Proceedings 1942, 080006 (2018);
<https://doi.org/10.1063/1.5028840>

361 (1996) ✓

360 (1996) ✓

SHOW ABSTRACT

359 (1996) ✓

 No Access . April 2018

358 (1996) ✓

Z-scan measurement for nonlinear absorption property of rGO/ZnO:Al thin film

357 (1996) ✓

V. G. Sreeja and E. I. Anila

356 (1996) ✓

AIP Conference Proceedings 1942, 080007 (2018);
<https://doi.org/10.1063/1.5028841>


355 (1996) ✓

354 (1996) ✓

SHOW ABSTRACT

353 (1996) ✓

352 (1996) ✓

 No Access . April 2018

351 (1996) ✓

Effect of composition on SILAR deposited $Cd_xZn_{1-x}S$ thin films

349 (1996) ✓

Ashith V. K. and Gowrish Rao K.

348 (1996) ✓

AIP Conference Proceedings 1942, 080008 (2018);
<https://doi.org/10.1063/1.5028842>

350 (1995) ✓

347 (1995) ✓

SHOW ABSTRACT

346 (1995) ✓

345 (1995) ✓

 No Access . April 2018

Chemical spray pyrolyzed kesterite Cu_2ZnSnS_4 (CZTS)


- 344 (1995) ▼
- 343 (1995) ▼
- 342 (1995) ▼
- 341 (1995) ▼
- 340 (1995) ▼
- 339 (1995) ▼
- 338 (1995) ▼
- 337 (1995) ▼
- 336 (1995) ▼
- 335 (1995) ▼
- 334 (1995) ▼
- 333 (1995) ▼
- 332 (1995) ▼
- 331 (1995) ▼
- 330 (1995) ▼
- 329 (1995) ▼
- 328 (1995) ▼
- 327 (1995) ▼

thin films

S. A. Khalate, R. S. Kate and R. J. Deokate

AIP Conference Proceedings **1942**, 080009 (2018);
<https://doi.org/10.1063/1.5028843>

SHOW ABSTRACT

 No Access . April 2018

Fabrication and stability investigation of ultra-thin transparent and flexible Cu-Ag-Au tri-layer film on PET

Ch Surya Prakasarao, Slavia Deeksha D'souza, Pratim Hazarika, Karthiselva N. S., Ramesh Babu R., Kovendhan M., R. Arockia Kumar and D. Paul Joseph

AIP Conference Proceedings **1942**, 080010 (2018);
<https://doi.org/10.1063/1.5028844>

SHOW ABSTRACT

326 (1995) ✓

325 (1995) ✓

324 (1995) ✓

322 (1995) ✓

321 (1995) ✓

320 (1995) ✓

294 (1994) ✓

289 (1994) ✓

319 (1994) ✓

318 (1994) ✓

317 (1994) ✓

316 (1994) ✓

315 (1994) ✓


323 (1994) ✓

314 (1994) ✓

313 (1994) ✓

312 (1994) ✓

311 (1994) ✓


 No Access . April 2018

Structural analysis of LaFeO₃ thin films grown on SrTiO₃ and LaAlO₃ substrates

Samiya Manzoor, Anand Somvanshi and Shahid Husain

AIP Conference Proceedings **1942**, 080011 (2018);
<https://doi.org/10.1063/1.5028845>

SHOW ABSTRACT

 No Access . April 2018

Local structure investigation on Mn and Co doped TiO₂ thin films by x-ray absorption spectroscopy

A. K. Yadav, S. M. Haque, R. De, Md. A. Ahmed, V. Srihari, M. Gupta, D. M. Phase, S. Bandyopadhyay, S. N. Jha and D. Bhattacharyya
















AIP Conference Proceedings **1942**, 080012 (2018);
<https://doi.org/10.1063/1.5028846>

SHOW ABSTRACT

 No Access . April 2018

Surface-enhanced infrared absorption spectroscopy of cytosine using gold film deposited on CaF₂ substrate


Naveen Kumar, S. Thomas, R. B. Tokas, N. Padma

310 (1994) 309 (1994) 308 (1994) 307 (1994) 301 (1994) 306 (1994) 305 (1994) 304 (1994) 303 (1994) 302 (1994) 300 (1994) 296 (1994) 284 (1994) 299 (1994) 298 (1994) 295 (1993) 293 (1993) 291 (1993) 

and R. J. Kshirsagar

AIP Conference Proceedings **1942**, 080013 (2018);
<https://doi.org/10.1063/1.5028847>

SHOW ABSTRACT


 No Access . April 2018

A study on micro-structural and optical parameters of $\text{In}_x\text{Se}_{1-x}$ thin film

P. B. Patel, H. N. Desai, J. M. Dhimmar and B. P. Modi

AIP Conference Proceedings **1942**, 080014 (2018);
<https://doi.org/10.1063/1.5028848>

SHOW ABSTRACT


 No Access . April 2018



















Optimization of co-sputtered FePt films using x-ray scattering techniques

M. A. Basha, M. Gupta, C. L. Prajapat, S. Basu and Surendra Singh

AIP Conference Proceedings **1942**, 080015 (2018);
<https://doi.org/10.1063/1.5028849>

SHOW ABSTRACT

 No Access . April 2018

- 290 (1993) 
- 288 (1993) 
- 285 (1993) 
- 283 (1993) 
- 280 (1993) 
- 276 (1993) 
- 275 (1993) 
- 274 (1993) 
- 297 (1993) 
- 271 (1993) 
- 269 (1992) 
- 268 (1992) 
- 292 (1992) 
- 287 (1992) 
- 267 (1992) 
- 286 (1992) 
- 266 (1992) 
- 264 (1992) 

Studies of electronic and magnetic properties of LaVO_3 thin film

Anupam Jana, Sharad Karwal, R. J. Choudhary and D. M. Phase

AIP Conference Proceedings **1942**, 080016 (2018); <https://doi.org/10.1063/1.5028850>

SHOW ABSTRACT

 No Access . April 2018

Tuning wettability of hydrogen titanate nanowire mesh by Na^+ irradiation

Pritam Das and Shyamal Chatterjee

AIP Conference Proceedings **1942**, 080017 (2018); <https://doi.org/10.1063/1.5028851>

SHOW ABSTRACT

 No Access . April 2018

Tuning the surface morphology of aluminium doped zinc oxide thin films by arrayed nanorods through chemical growth process

Sebin Devasia and E. I. Anila

AIP Conference Proceedings **1942**, 080018 (2018); <https://doi.org/10.1063/1.5028852>

263 (1992) ✓

SHOW ABSTRACT

262 (1992) ✓

282 (1992) ✓

261 (1992) ✓

281 (1992) ✓

260 (1992) ✓

259 (1992) ✓

279 (1992) ✓

SHOW ABSTRACT

258 (1992) ✓

278 (1992) ✓

277 (1992) ✓

257 (1992) ✓

256 (1992) ✓


255 (1992) ✓

254 (1992) ✓

253 (1992) ✓


252 (1992) ✓

251 (1992) ✓

 No Access . April 2018

Vertical growth of ZnO nanorods on ZnO seeded FTO substrate for dye sensitized solar cells

T. Marimuthu and N. Anandhan


AIP Conference Proceedings **1942**, 080019 (2018);
<https://doi.org/10.1063/1.5028853> No Access . April 2018

Electronic structure and simulated STM images of non-honeycomb phosphorene allotropes

Sumandeep Kaur, Ashok Kumar, Sunita Srivastava and K. Tankeshwar

AIP Conference Proceedings **1942**, 080020 (2018);
<https://doi.org/10.1063/1.5028854>

SHOW ABSTRACT

 No Access . April 2018

Studies on annealed ZnO:V thin films deposited by nebulised spray pyrolysis


- 250 (1992) ∨
- 249 (1992) ∨
- 248 (1992) ∨
- 247 (1992) ∨
- 273 (1992) ∨
- 272 (1992) ∨
- 246 (1992) ∨
- 245 (1992) ∨
- 244 (1992) ∨
- 243 (1992) ∨
- 242 (1991) ∨
- 241 (1991) ∨
- 240 (1991) ∨
- 239 (1991) ∨
- 238 (1991) ∨
- 235 (1991) ∨
- 265 (1991) ∨
- 237 (1991) ∨

method

D. Rachel Malini

AIP Conference Proceedings **1942**, 080021 (2018);
<https://doi.org/10.1063/1.5028855>

SHOW ABSTRACT


 No Access . April 2018

Effect of Cerium(III) and ionic liquids on the clouding behavior of Triton X-100 micelles

Indrani Das Sen, Charu Negi and Radha V. Jayaram

AIP Conference Proceedings **1942**, 080022 (2018);
<https://doi.org/10.1063/1.5028856>

SHOW ABSTRACT

 No Access . April 2018


Intrinsic stress modulation in diamond like carbon films with incorporation of gold nanoparticles by PLA

Madhusmita Panda, R. Krishnan, Nanda Gopala Krishna, Kishore K. Madapu and M. Kamruddin

AIP Conference Proceedings **1942**, 080023 (2018);
<https://doi.org/10.1063/1.5028857>

SHOW ABSTRACT

- 236 (1991) ∨
- 234 (1991) ∨
- 233 (1991) ∨
- 232 (1991) ∨
- 231 (1991) ∨
- 230 (1991) ∨
- 229 (1991) ∨
- 228 (1991) ∨
- 227 (1991) ∨
- 226 (1991) ∨
- 225 (1991) ∨
- 224 (1991) ∨
- 223 (1991) ∨
- 222 (1991) ∨
- 221 (1991) ∨
- 220 (1991) ∨
- 219 (1991) ∨
- 218 (1991) ∨


 No Access . April 2018

Surface analysis and electrothermal performance of highly uniform PEDOT:PSS spin-coated films using infrared thermography

Mydhili V., Deepjyoti Das, L. R. Shobin and S. Manivannan

AIP Conference Proceedings **1942**, 080024 (2018);
<https://doi.org/10.1063/1.5028858>

SHOW ABSTRACT

 No Access . April 2018

Studies on surface morphology and electrical conductivity of PEDOT:PSS thin films in presence of gold nanoparticles

Ashim Chandra Bhowal and Sarathi Kundu

AIP Conference Proceedings **1942**, 080025 (2018);
<https://doi.org/10.1063/1.5028859>

SHOW ABSTRACT

217 (1991) ✓

270 (1991) ✓

217 (1991) ✓

215 (1990) ✓

216 (1990) ✓

214 (1990) ✓

213 (1990) ✓

212 (1990) ✓

211 (1990) ✓

210 (1990) ✓

209 (1990) ✓

208 (1990) ✓

207 (1990) ✓


205 (1990) ✓

206 (1990) ✓

204 (1990) ✓

203 (1990) ✓

202 (1990) ✓


 No Access . April 2018

Preparation and temperature dependent Raman study of polycrystalline GdFeO_3 thin film

Anjali Panchwatee, V. Raghavendra Reddy, Ajay Gupta, V. G. Sathe, R. J. Choudhary, D. M. Phase and V. Ganesan

AIP Conference Proceedings **1942**, 080026 (2018);
<https://doi.org/10.1063/1.5028860>

SHOW ABSTRACT


 No Access . April 2018

Cd-doped ZnO nano crystalline thin films prepared at 723K by spray pyrolysis

Sumanth Joishy and Rajendra B. V.

AIP Conference Proceedings **1942**, 080027 (2018);
<https://doi.org/10.1063/1.5028861>

SHOW ABSTRACT

 No Access . April 2018

High crystalline CuAlS_2 thin films via chemical spray pyrolysis route

D. Naveena, T. Logu, K. Sethuraman and A. Chandra Bose

AIP Conference Proceedings **1942**, 080028 (2018);

201 (1990) ✓


<https://doi.org/10.1063/1.5028862>

199 (1990) ✓

SHOW ABSTRACT

200 (1990) ✓

198 (1990) ✓

 No Access . April 2018

Optical and structural behaviors of crosslinked polyvinyl alcohol thin films

Subhankar Pandit and Sarathi Kundu

AIP Conference Proceedings **1942**, 080029 (2018);
<https://doi.org/10.1063/1.5028863>

196 (1989) ✓


195 (1989) ✓

194 (1989) ✓

SHOW ABSTRACT

191 (1989) ✓

193 (1989) ✓

 No Access . April 2018

Thin film of polyelectrolyte complex nanoparticles for protein sensing

Hrishikesh Talukdar and Sarathi Kundu

AIP Conference Proceedings **1942**, 080030 (2018);
<https://doi.org/10.1063/1.5028864>

192 (1989) ✓

189 (1989) ✓

188 (1989) ✓


186 (1989) ✓

187 (1989) ✓

SHOW ABSTRACT

190 (1989) ✓

187 (1989) ✓

 No Access . April 2018

Effect of laser irradiation on $\text{Ag}_4\text{In}_{12}\text{Sb}_{56}\text{Te}_{28}$

Rangasami Chinnusamy

185 (1989) ✓

184 (1989) ✓

AIP Conference Proceedings **1942**, 080031 (2018);
<https://doi.org/10.1063/1.5028865>

183 (1989) ✓

182 (1989) ✓

SHOW ABSTRACT

181 (1988) ✓

 No Access . April 2018

180 (1988) ✓

Structural and electrical properties of In₂O₃ thin films prepared by pulsed laser deposition

179 (1988) ✓

Y. Veeraswami, R. J. Choudhary, D. M. Phase,
Anupam Jana, S. Uday Bhaskar and M. V. Ramana
Reddy

178 (1988) ✓

177 (1988) ✓

AIP Conference Proceedings **1942**, 080032 (2018);
<https://doi.org/10.1063/1.5028866>

176 (1988) ✓

175 (1988) ✓

SHOW ABSTRACT

173 (1988) ✓

172 (1988) ✓

 No Access . April 2018

171 (1988) ✓

Mechanical properties of amorphous and devitrified Ni-Zr alloy thin films: A cyclic nanoindentation study

170 (1988) ✓

Debarati Bhattacharya, Arnomitra Chatterjee and
Swapan Jana

169 (1988) ✓

AIP Conference Proceedings **1942**, 080033 (2018);
<https://doi.org/10.1063/1.5028867>

167 (1988) ✓

168 (1988) ✓

166 (1988) ✓

SHOW ABSTRACT

165 (1988) ✓

174 (1988) ✓

164 (1987) ✓

163 (1987) ✓

162 (1987) ✓

161 (1987) ✓

160 (1987) ✓

159 (1987) ✓

158 (1987) ✓

157 (1987) ✓

156 (1987) ✓

155 (1987) ✓

154 (1987) ✓


153 (1987) ✓

150 (1986) ✓

149 (1986) ✓

147 (1986) ✓

148 (1986) ✓


 No Access . April 2018

Effect on the properties of ITO thin films in Gamma environment

A. H. Sofi, M. A. Shah and K. Asokan

AIP Conference Proceedings **1942**, 080034 (2018);
<https://doi.org/10.1063/1.5028868>

SHOW ABSTRACT


 No Access . April 2018

Liquid petroleum gas sensing application of ZnO/CdO:ZnO nanocomposites at low temperature

Jeevitesh K. Rajput, T. K. Pathak, V. Kumar, H. C. Swart and L. P. Purohit

AIP Conference Proceedings **1942**, 080035 (2018);
<https://doi.org/10.1063/1.5028869>

SHOW ABSTRACT

 No Access . April 2018

Reduction in the formation temperature of *Poly-SiGe* alloy thin film in Si/Ge system

Twisha Tah, Ch. Kishan Singh, K. K. Madapu, R. M. Sarguna, P. Magudapathy and S. Ilango

AIP Conference Proceedings **1942**, 080036 (2018);

146 (1986) ✓


<https://doi.org/10.1063/1.5028870>

151 (1986) ✓

SHOW ABSTRACT

145 (1986) ✓

144 (1986) ✓

 No Access . April 2018

Microstructural characterization of PAN based carbon fiber reinforced nylon 6 polymer composites

L. M. Munirathamma, S. Ningaraju, K. V. Aneesh Kumar and H. B. Ravikumar

AIP Conference Proceedings **1942**, 080037 (2018);
<https://doi.org/10.1063/1.5028871>

142 (1986) ✓

141 (1986) ✓


139 (1986) ✓

138 (1986) ✓

SHOW ABSTRACT

140 (1986) ✓

137 (1986) ✓

 No Access . April 2018

Study of thermal stability of spontaneously grown superlattice structures by metalorganic vapor phase epitaxy in $\text{Al}_x\text{Ga}_{1-x}\text{As}/\text{GaAs}$ heterostructure

A. Pradhan, T. Maitra, S. Mukherjee, S. Mukherjee, B. Satpati, A. Nayak and S. Bhunia

AIP Conference Proceedings **1942**, 080038 (2018);
<https://doi.org/10.1063/1.5028872>

152 (1986) ✓

135 (1985) ✓

134 (1985) ✓

133 (1985) ✓

131 (1985) ✓

130 (1985) ✓

129 (1985) ✓

SHOW ABSTRACT

128 (1985) ✓

127 (1985) ✓

126 (1985) ✓

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123 (1984) ✓

122 (1984) ✓

121 (1984) ✓

120 (1984) ✓

118 (1984) ✓

119 (1984) ✓


115 (1984) ✓

117 (1984) ✓

116 (1984) ✓

113 (1984) ✓

114 (1984) ✓


 No Access . April 2018

Growth and characterization of InAs sub-monolayer quantum dots with varying fractional coverage

S. Mukherjee, A. Pradhan, S. Mukherje, T. Maitra, S. Sengupta, S. Chakrabarti, A. Nayak and S. Bhunia

AIP Conference Proceedings 1942, 080039 (2018);
<https://doi.org/10.1063/1.5028873>

SHOW ABSTRACT


 No Access . April 2018

Template assisted strain tuning and phase stabilization in epitaxial BiFeO₃ thin films

Saj Mohan M. M. and Ranjith Ramadurai

AIP Conference Proceedings 1942, 080040 (2018);
<https://doi.org/10.1063/1.5028874>

SHOW ABSTRACT

 No Access . April 2018

Structural & oxidation behavior of TiN & Al_xTi_{1-x}N coatings deposited by CA-PVD technique


Nirmala Thorat, Rajesh Mundotia, Ranjana Varma, Ashwin Kale, Umesh Mhatre and Nainesh Patel

AIP Conference Proceedings 1942, 080041 (2018);

- 112 (1984) ∨
- 111 (1984) ∨
- 109 (1984) ∨
- 110 (1984) ∨
- 108 (1984) ∨
- 107 (1984) ∨
- 106 (1984) ∨
- 105 (1983) ∨
- 104 (1983) ∨
- 102 (1983) ∨
- 101 (1983) ∨
- 100 (1983) ∨
- 99 (1983) ∨
- 103 (1983) ∨
- 98 (1983) ∨
- 97 (1983) ∨
- 96 (1983) ∨
- 95 (1983) ∨

<https://doi.org/10.1063/1.5028875>

SHOW ABSTRACT

 No Access . April 2018


Effect of substrate temperature on some properties of nitrogen incorporated nickel ferrite thin films

K. B. Anoop Baby, G. Markandeyulu and A. Subrahmanyam

AIP Conference Proceedings **1942**, 080042 (2018);
<https://doi.org/10.1063/1.5028876>

SHOW ABSTRACT

- 94 (1982) ∨
- 93 (1982) ∨
- 92 (1982) ∨
- 91 (1982) ∨
- 90 (1982) ∨
- 89 (1982) ∨
- 88 (1982) ∨
- 87 (1982) ∨
- 86 (1982) ∨
- 85 (1982) ∨
- 84 (1982) ∨
- 82 (1982) ∨
- 83 (1982) ∨
- 81 (1982) ∨
- 78 (1982) ∨
- 80 (1982) ∨
- 79 (1982) ∨
- 77 (1982) ∨


 No Access . April 2018

Investigation on the electrochemical interfacial properties of 2-aminothiophenol functionalized graphene oxide modified electrode

Susan Immanuel, Aparna T. K. and R. Sivasubramanian

AIP Conference Proceedings **1942**, 080043 (2018);
<https://doi.org/10.1063/1.5028877>

SHOW ABSTRACT

 No Access . April 2018

Effect of additives on the clouding and aggregation behavior of Triton X-100

Divyam Semwal, Indrani Das Sen and Radha V. Jayaram

AIP Conference Proceedings **1942**, 080044 (2018);
<https://doi.org/10.1063/1.5028878>

SHOW ABSTRACT

76 (1981) ✓

75 (1981) ✓

74 (1981) ✓

73 (1981) ✓

72 (1981) ✓

71 (1981) ✓

69 (1981) ✓

70 (1981) ✓

68 (1981) ✓

67 (1981) ✓

66 (1981) ✓

65 (1980) ✓

64 (1980) ✓


63 (1980) ✓

62 (1980) ✓

61 (1980) ✓

60 (1980) ✓


59 (1980) ✓

 No Access . April 2018

Compositional study of pulsed laser deposited semitransparent Cu thin film using BEMA

Rahul Kesarwani and Alike Khare


AIP Conference Proceedings **1942**, 080045 (2018);
<https://doi.org/10.1063/1.5028879>

[SHOW ABSTRACT](#) No Access . April 2018

X-ray photoelectron spectroscopy studies of Fe₃O₄ films on Si and MgO substrates grown by pulsed laser deposition

Inderpal Singh, Sunil K. Arora, M. G. Moinuddin and R. J. Choudhary

AIP Conference Proceedings **1942**, 080046 (2018);
<https://doi.org/10.1063/1.5028880>

[SHOW ABSTRACT](#) No Access . April 2018

Effect of strain on transport behavior of perovskite SrIrO₃ thin films

Rachna Chaurasia, Harish Kumar and A. K. Pramanik

58 (1980) ✓


AIP Conference Proceedings 1942, 080047 (2018);
<https://doi.org/10.1063/1.5028881>

57 (1980) ✓

55 (1979) ✓

SHOW ABSTRACT

54 (1979) ✓

 No Access . April 2018

53 (1979) ✓

Anti-site defected MoS₂ sheet for catalytic application

Archana Sharma, Mushahid Husain and Mohd.
Shahid Khan

52 (1979) ✓

AIP Conference Proceedings 1942, 080048 (2018);
<https://doi.org/10.1063/1.5028882>

50 (1979) ✓


49 (1979) ✓

56 (1979) ✓

SHOW ABSTRACT

51 (1979) ✓

48 (1978) ✓

 No Access . April 2018

47 (1978) ✓

An investigation on the In doping of ZnO thin films by spray pyrolysis

Devika Mahesh and M. C. Santhosh Kumar

46 (1978) ✓

AIP Conference Proceedings 1942, 080049 (2018);
<https://doi.org/10.1063/1.5028883>


45 (1978) ✓

44 (1978) ✓

SHOW ABSTRACT

43 (1978) ✓

42 (1978) ✓

 No Access . April 2018

41 (1978) ✓

Structural and optical properties of tin disulphide

40 (1978) ✓

39 (1978) ✓

38 (1977) ✓

37 (1977) ✓

36 (1977) ✓

35 (1976) ✓

28 (1976) ✓

34 (1976) ✓

32 (1976) ✓

33 (1976) ✓

31 (1976) ✓

30 (1976) ✓

29 (1976) ✓

27 (1976) ✓

23 (1975) ✓

26 (1975) ✓

25 (1975) ✓


24 (1975) ✓

thin films grown by flash evaporation

Arun Banotra and Naresh Padha

AIP Conference Proceedings **1942**, 080050 (2018);
<https://doi.org/10.1063/1.5028884>

SHOW ABSTRACT


 No Access . April 2018

Enhancement of UV photodetector properties of ZnO nanorods/PEDOT:PSS Schottky junction by NGQD sensitization along with conductivity improvement of PEDOT:PSS by DMSO additive

Saurab Dhar, Tanmoy Majumder, Pinak Chakraborty and Suvra Prakash Mondal


















AIP Conference Proceedings **1942**, 080051 (2018);
<https://doi.org/10.1063/1.5028885>

SHOW ABSTRACT

 No Access . April 2018


Refurbishing of carbon contaminated pre-mirror of reflectivity beam line at Indus-1

P. K. Yadav, M. Kumar, R. K. Gupta, M. Sinha, H. S. Patel and M. H. Modi

- 22 (1974) 
- 21 (1974) 
- 20 (1974) 
- 19 (1974) 
- 18 (1974) 
- 17 (1974) 
- 16 (1974) 
- 15 (1973) 
- 14 (1973) 
- 13 (1973) 
- 12 (1973) 
- 11 (1973) 
- 10 (1973) 
- 9 (1972) 
- 8 (1972) 
- 7 (1972) 
- 6 (1972) 
- 5 (1972) 

AIP Conference Proceedings 1942, 080052 (2018);
<https://doi.org/10.1063/1.5028886>

SHOW ABSTRACT


 No Access . April 2018

TiO₂ induced structural modifications in Cs containing borosilicate glasses: Raman and infrared studies

M. Pandey, D. Banerjee, V. Sudarsan and R. J. Kshirsagar

AIP Conference Proceedings 1942, 080053 (2018);
<https://doi.org/10.1063/1.5028887>

SHOW ABSTRACT

 No Access . April 2018


Synergistic effect of indium and gallium co-doping on the properties of RF sputtered ZnO thin films

Shaheera M., K. G. Girija, Manmeet Kaur, V. Geetha, A. K. Debnath, Malvika Karri, Manoj Kumar Thota, R. K. Vatsa, K. P. Muthe and S. C. Gadkari

AIP Conference Proceedings 1942, 080054 (2018);
<https://doi.org/10.1063/1.5028888>

SHOW ABSTRACT

- 4 (1972) ▼
- 3 (1972) ▼
- 2 (1971) ▼
- 1 (1970) ▼


 No Access . April 2018

Structure and magnetic properties of Mn-Fe co-doped ZnO thin films deposited by RF-magnetron sputtering

V. Malapati, K. K. Venkataratnam and R. Singh

AIP Conference Proceedings **1942**, 080055 (2018);
<https://doi.org/10.1063/1.5028889>

SHOW ABSTRACT


 No Access . April 2018

Experimental and simulation study of growth of TiO₂ films on different substrates and its applications

Trupti T. Ghogare, Moses J. Kartha, Subhash D. Kendre and Habib M. Pathan

AIP Conference Proceedings **1942**, 080056 (2018);
<https://doi.org/10.1063/1.5028890>

SHOW ABSTRACT


 No Access . April 2018

Portable mini-chamber for temperature dependent studies using small angle and wide angle x-ray scattering

Arun Singh Dev, Dileep Kumar, Satish Potdar, Pallavi Pandit, Stephan V. Roth and Ajay Gupta

AIP Conference Proceedings **1942**, 080057 (2018);
<https://doi.org/10.1063/1.5028891>

SHOW ABSTRACT


 No Access . April 2018

Effect of temperature on NH₃ sensing by ZnO: Mg thin film grown by radio frequency magnetron sputtering technique

E. Vinoth and N. Gopalakrishnan

AIP Conference Proceedings **1942**, 080058 (2018);
<https://doi.org/10.1063/1.5028892>

SHOW ABSTRACT


 No Access . April 2018

Multilayer graphene as an effective corrosion protection coating for copper

Vasumathy Ravishankar, S. Ramaprabhu and
Manu Jaiswal

AIP Conference Proceedings **1942**, 080059 (2018);
<https://doi.org/10.1063/1.5028893>

SHOW ABSTRACT


 No Access . April 2018

Nonlinear optical properties of Nd³⁺-Li⁺ co-doped ZnS-PVP thin films

S. S. Talwatkar, A. L. Sunatkari, Y. S. Tamgadge and G. G. Muley

AIP Conference Proceedings **1942**, 080060 (2018);
<https://doi.org/10.1063/1.5028894>

SHOW ABSTRACT

 No Access . April 2018

Facile synthesis of silicon nanowire-nanopillar superhydrophobic structures

Abhijit Roy and Biswarup Satpati

AIP Conference Proceedings **1942**, 080061 (2018);
<https://doi.org/10.1063/1.5028895>

SHOW ABSTRACT


 No Access . April 2018

Superparamagnetic behavior of Fe₇₀Dy₃₀ granular thin film

Laxman Mekala, Muhammed Shameem P. V. and M. Senthil Kumar

AIP Conference Proceedings **1942**, 080062 (2018);
<https://doi.org/10.1063/1.5028896>

SHOW ABSTRACT


 No Access . April 2018

Recrystallization in Si upon ion irradiation at room temperature in Co/Si(111) thin film systems

Nasrin Banu, B. Satpati and B. N. Dev

AIP Conference Proceedings **1942**, 080063 (2018);
<https://doi.org/10.1063/1.5028897>

SHOW ABSTRACT


 No Access . April 2018

Temperature dependent relaxation of interface-states in graphene on SiO₂

Anil Kumar Singh and Anjan Kumar Gupta

AIP Conference Proceedings **1942**, 080064 (2018);
<https://doi.org/10.1063/1.5028898>

SHOW ABSTRACT


 No Access . April 2018

Synthesis of nanodimensional orthorhombic SnO₂ thin films

V. Kondkar, D. Rukade, D. Kanjilal and V. Bhattacharyya

AIP Conference Proceedings **1942**, 080065 (2018);
<https://doi.org/10.1063/1.5028899>

SHOW ABSTRACT


 No Access . April 2018

Enhanced photo response of mesoporous nanostructured CdS thin film via electro spray aerosol deposition technique

T. Logu, P. Soundarrajan, K. Sankarasubramanian and K. Sethuraman

AIP Conference Proceedings **1942**, 080066 (2018);
<https://doi.org/10.1063/1.5028900>

SHOW ABSTRACT


 No Access . April 2018

Solvent influence upon structure & throughput of poly vinylidene fluoride thin film nano-patterns by imprint lithography

M. S. Ravi Sankar and R. B. Gangineni

AIP Conference Proceedings **1942**, 080067 (2018);
<https://doi.org/10.1063/1.5028901>

SHOW ABSTRACT

 No Access . April 2018


Maintaining significant ultra-nanocrystallinity in electrically

conducting boron doped silicon thin layers for solar cells

Debajyoti Das and Chandralina Patra

AIP Conference Proceedings **1942**, 080068 (2018);
<https://doi.org/10.1063/1.5028902>

SHOW ABSTRACT


 No Access . April 2018

Optimization of growth of nanocrystalline silicon germanium thin films synthesized by RF-PECVD

Amaresh Dey and Debajyoti Das

AIP Conference Proceedings **1942**, 080069 (2018);
<https://doi.org/10.1063/1.5028903>

SHOW ABSTRACT


 No Access . April 2018

Polymer thin film as coating layer to prevent corrosion of metal/metal oxide film

Suman Sarkar and Sarathi Kundu

AIP Conference Proceedings **1942**, 080070 (2018);
<https://doi.org/10.1063/1.5028904>

SHOW ABSTRACT


 No Access . April 2018

Fabrication of Si_3N_4 thin films on phynox alloy substrates for electronic applications

V. Shankernath, K. Lakshun Naidu, M. Ghanashyam Krishna and K. A. Padmanabhan

AIP Conference Proceedings **1942**, 080071 (2018);
<https://doi.org/10.1063/1.5028905>

SHOW ABSTRACT


 No Access . April 2018

Swift heavy ion irradiation studies of GdFeO_3 orthoferrite thin films

Pawanpreet Kaur, Rabia Pandit, K. K. Sharma and Ravi Kumar

AIP Conference Proceedings **1942**, 080072 (2018);
<https://doi.org/10.1063/1.5028906>

SHOW ABSTRACT


 No Access . April 2018

Surface alloying in Sn/Au(111) at elevated temperature

Pampa Sadhukhan, Vipin Kumar Singh, Abhishek Rai, Kuntala Bhattacharya and Sudipta Roy Barman

AIP Conference Proceedings **1942**, 080073 (2018);
<https://doi.org/10.1063/1.5028907>

SHOW ABSTRACT


 No Access . April 2018

Role of oxygen impurities in synthesis of iron mononitride thin films

Niti, Seema and Mukul Gupta

AIP Conference Proceedings **1942**, 080074 (2018);
<https://doi.org/10.1063/1.5028908>

SHOW ABSTRACT

 No Access . April 2018


Finding pathways to prepare Fe₄N thin films at low substrate temperature

Seema and Nitiand Mukul Gupta

AIP Conference Proceedings **1942**, 080075 (2018);

<https://doi.org/10.1063/1.5028909>

SHOW ABSTRACT


 No Access . April 2018

Investigation on gas sensing properties of Ag doped BiFeO₃

Toshi Bagwaiya, Poonam Khade, Hilal Ahmad Reshi, Shovit Bhattacharya, Vilas Shelke, Manmeet Kaur, A. K. Debnath, K. P. Muthe and S. C. Gadkari

AIP Conference Proceedings **1942**, 080076 (2018);
<https://doi.org/10.1063/1.5028910>

SHOW ABSTRACT


 No Access . April 2018

Structural and magnetic properties of non-stoichiometric Fe_{1-x}O thin films

Muhammed Shameem P. V., Laxman Mekala and M. Senthil Kumar

AIP Conference Proceedings **1942**, 080077 (2018);
<https://doi.org/10.1063/1.5028911>

SHOW ABSTRACT

 No Access . April 2018


Evolution of zirconyl-stearate

Langmuir monolayers and the synthesized ZrO₂ thin films with pH

Raveena Choudhary, Rajni Sharma and Loveleen K. Brar

AIP Conference Proceedings **1942**, 080078 (2018);
<https://doi.org/10.1063/1.5028912>

SHOW ABSTRACT


 No Access . April 2018

Influence of oxygen on growth of carbon thin films

Prabhat Kumar, Mukul Gupta, D. M. Phase and Jochen Stahn

AIP Conference Proceedings **1942**, 080079 (2018);
<https://doi.org/10.1063/1.5028913>

SHOW ABSTRACT


 No Access . April 2018

Synthesis and characterization of photoconducting (Cd:Zn)S thin films by hydrothermal assisted chemical bath deposition

Joissy Mathew, Sebin Devasia and E. I. Anila

AIP Conference Proceedings **1942**, 080080 (2018);
<https://doi.org/10.1063/1.5028914>

SHOW ABSTRACT

 No Access . April 2018


Investigation of composition dependence of the nanowire samples grown on brass on synthesis conditions

Himanshu Srivastava, Ajay Khooha, Ajit Singh and Tapas Ganguli

AIP Conference Proceedings **1942**, 080081 (2018);
<https://doi.org/10.1063/1.5028915>

SHOW ABSTRACT

CONTRIBUTED PAPERS G. Electronic Structures and Phonons


 No Access . April 2018

Structural, electronic and thermal properties of super hard ternary boride, WAIB

Priyanka Rajpoot, Anugya Rastogi and U. P. Verma

AIP Conference Proceedings **1942**, 090001 (2018);
<https://doi.org/10.1063/1.5028916>

SHOW ABSTRACT

 No Access . April 2018


Electronic structure and

superconducting properties of TcTi and TcV intermetallic compounds

Nikita Acharya, Deepika Shrivastava and Sankar P. Sanyal

AIP Conference Proceedings **1942**, 090002 (2018);
<https://doi.org/10.1063/1.5028917>

SHOW ABSTRACT


 No Access . April 2018

Metallicity of the anharmonic Holstein-Hubbard model in the adiabatic regime

Ch. Uma Lavanya and Ashok Chatterjee

AIP Conference Proceedings **1942**, 090003 (2018);
<https://doi.org/10.1063/1.5028918>

SHOW ABSTRACT


 No Access . April 2018

Structural, electronic and magnetic properties of Pr-based filled skutterudites: A first principle study

Priya Yadav, Shashank Nautiyal and U. P. Verma

AIP Conference Proceedings **1942**, 090004 (2018);
<https://doi.org/10.1063/1.5028919>

SHOW ABSTRACT


 No Access . April 2018

First principle study of UHTC ternary diboride, Cr₂AlB₂

Anugya Rastogi, Priyanka Rajpoot and U. P. Verma

AIP Conference Proceedings **1942**, 090005 (2018);
<https://doi.org/10.1063/1.5028920>

SHOW ABSTRACT


 No Access . April 2018

***Ab-initio* calculation for cation vacancy formation energy in anti-fluorite structure**

V. P. Saleel Ahammad Saleel, D. Chitra, K. Veluraja and R. D. Eithiraj

AIP Conference Proceedings **1942**, 090006 (2018);
<https://doi.org/10.1063/1.5028921>

SHOW ABSTRACT


 No Access . April 2018

Electric field effects on the optical properties of buckled GaAs monolayer

Bhagwati Prasad Bahuguna, L. K. Saini and Rajesh O. Sharma

AIP Conference Proceedings **1942**, 090007 (2018);
<https://doi.org/10.1063/1.5028922>

SHOW ABSTRACT


 No Access . April 2018

Dynamical and electronic properties of rare-earth aluminides

Ramesh Sharma and Yamini Sharma

AIP Conference Proceedings **1942**, 090008 (2018);
<https://doi.org/10.1063/1.5028923>

SHOW ABSTRACT


 No Access . April 2018

Structural and electronic properties of NdX (X=As and Sb) monopnictides

Harsha Pawar, Mani Shugani, Nikita Acharya, Mahendra Aynyas and Sankar P. Sanyal

AIP Conference Proceedings **1942**, 090009 (2018);
<https://doi.org/10.1063/1.5028924>

SHOW ABSTRACT


 No Access . April 2018

Stability of half-metallic behavior with lattice variation for $\text{Fe}_{2-x}\text{Co}_x\text{MnAl}$ Heusler alloy

Vivek Kumar Jain, N. Lakshmi and Rakesh Jain

AIP Conference Proceedings **1942**, 090010 (2018);
<https://doi.org/10.1063/1.5028925>

SHOW ABSTRACT

 No Access . April 2018

First principles investigations of Fe_2CrSi Heusler alloys by substitution of Co at Fe site

Rakesh Jain, N. Lakshmi, Vivek Kumar Jain and Aarti R. Chandra

AIP Conference Proceedings **1942**, 090011 (2018);
<https://doi.org/10.1063/1.5028926>

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 No Access . April 2018

Ferromagnetism in half-

metallic EuGaO₃ perovskite: A combined DFT and DFT+U investigation

Sajad Ahmad Dar, Vipul Srivastava and Umesh Kumar Sakalle

AIP Conference Proceedings **1942**, 090012 (2018);
<https://doi.org/10.1063/1.5028927>

SHOW ABSTRACT



No Access . April 2018

Optical properties of doped MnTiO₃

R. K. Maurya and R. Bindu

AIP Conference Proceedings **1942**, 090013 (2018);
<https://doi.org/10.1063/1.5028928>

SHOW ABSTRACT




No Access . April 2018

Scattering by flexural phonons in unstrained graphene in BG regime

Mohd Meenhaz Ansari, M. Obaidurrahman and S. S. Z. Ashraf

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<https://doi.org/10.1063/1.5028929>

SHOW ABSTRACT


 No Access . April 2018

Lattice dynamic study of nickel ferrite nanoparticles using high pressure Raman spectroscopy

Shekhar Tyagi, Gaurav Sharma and Vasant Sathe

AIP Conference Proceedings **1942**, 090015 (2018);
<https://doi.org/10.1063/1.5028930>

SHOW ABSTRACT

 No Access . April 2018

Evaluating effective pair and multisite interactions for Ni-Mo system

Rumu H. Banerjee, A. Arya and S. Banerjee

AIP Conference Proceedings **1942**, 090016 (2018);
<https://doi.org/10.1063/1.5028931>

SHOW ABSTRACT


 No Access . April 2018

Calculation of effective Coulomb interaction in PrCoO₃

Paromita Dutta, Sohan Lal and Sudhir K. Pandey

AIP Conference Proceedings **1942**, 090017 (2018);
<https://doi.org/10.1063/1.5028932>

SHOW ABSTRACT


 No Access . April 2018

Lattice stability and thermal properties of Fe₂VAl and Fe₂TiSn Heusler compounds

Shivprasad S. Shastri and Sudhir K. Pandey

AIP Conference Proceedings **1942**, 090018 (2018);
<https://doi.org/10.1063/1.5028933>

SHOW ABSTRACT


 No Access . April 2018

Studying the hopping parameters of half-Heusler NaAuS using maximally localized Wannier function

Antik Sihi, Sohan Lal and Sudhir K. Pandey

AIP Conference Proceedings **1942**, 090019 (2018);
<https://doi.org/10.1063/1.5028934>

SHOW ABSTRACT


 No Access . April 2018

Influence of applied pressure on bond distortions and electronic band structure of GeTe: First principle calculations

Janpreet Singh, Baljinder Singh, Gurinder Singh, Aman Kaura and S. K. Tripathi

AIP Conference Proceedings **1942**, 090020 (2018);
<https://doi.org/10.1063/1.5028935>

SHOW ABSTRACT


 No Access . April 2018

EPR and optical investigation of Mn²⁺ doped L-histidine-4-nitrophenolate 4-nitrophenol single crystal

R. Prabakaran and P. Subramanian

AIP Conference Proceedings **1942**, 090021 (2018);
<https://doi.org/10.1063/1.5028936>

SHOW ABSTRACT


 No Access . April 2018

Strain effect on electronic and lattice dynamical behaviour of two dimensional Bi, BiAs and BiSb

Sharad Babu Pillai, Shweta D. Dabhi, Som Narayan
and Prafulla K. Jha

AIP Conference Proceedings **1942**, 090022 (2018);
<https://doi.org/10.1063/1.5028937>

SHOW ABSTRACT


 No Access . April 2018

Effect on electronic and optical properties of Frenkel and Schottky defects in HfS₂ monolayer

Deobrat Singh, Nisha Singh, Sanjeev K. Gupta and
Yogesh Sonvane

AIP Conference Proceedings **1942**, 090023 (2018);
<https://doi.org/10.1063/1.5028938>

SHOW ABSTRACT


 No Access . April 2018

***An ab-initio* study of mechanical, dynamical and electronic properties of MgEu intermetallic**

S. Ramesh Kumar, G. Jaiganesh and V.
Jayalakshmi

AIP Conference Proceedings **1942**, 090024 (2018);
<https://doi.org/10.1063/1.5028939>

SHOW ABSTRACT


 No Access . April 2018

Ab-initio study of phonon and thermodynamic properties of Znic-blende ZnSe

Swati Khatta, Veerpal Kaur, S. K. Tripathi and Satya Prakash

AIP Conference Proceedings **1942**, 090025 (2018);
<https://doi.org/10.1063/1.5028940>

SHOW ABSTRACT

 No Access . April 2018

Ab-initio study of double perovskite Ba₂YSbO₆

Golak Mondal, D. Jha, A. K. Himanshu, J. Lahiri, B. K. Singh, Uday Kumar and Rajyavardhan Ray

AIP Conference Proceedings **1942**, 090026 (2018);
<https://doi.org/10.1063/1.5028941>

SHOW ABSTRACT


 No Access . April 2018

Electronic properties and stability criteria of rhombohedral HCoO₂

Deepak Upadhyay, Anjali Patel, Arun Pratap and Prafulla K. Jha

AIP Conference Proceedings **1942**, 090027 (2018);
<https://doi.org/10.1063/1.5028942>

SHOW ABSTRACT


 No Access . April 2018

Electronic structure modifications and band gap narrowing in $\text{Zn}_{0.95}\text{V}_{0.05}\text{O}$

Abdul Ahad, S. S. Majid, F. Rahman, D. K. Shukla and D. M. Phase

AIP Conference Proceedings **1942**, 090028 (2018);
<https://doi.org/10.1063/1.5028943>

SHOW ABSTRACT


 No Access . April 2018

Doping induced carrier and band-gap modulation in bulk versus nano for topological insulators: A test case of Stibnite

Tuhin Kumar Maji, Samir Kumar Pal and Debjani Karmakar

AIP Conference Proceedings **1942**, 090029 (2018);
<https://doi.org/10.1063/1.5028944>

SHOW ABSTRACT

 No Access . April 2018


Assessment of band gaps for alkaline-earth chalcogenides

using improved Tran Blaha-modified Becke Johnson potential

N. Yedukondalu, Lavanya Kunduru, S. C. Rakesh Roshan and M. Sainath

AIP Conference Proceedings **1942**, 090030 (2018);
<https://doi.org/10.1063/1.5028945>

SHOW ABSTRACT


 No Access . April 2018

Bands dispersion and charge transfer in β -BeH₂

D. K. Trivedi, K. L. Galav and K. B. Joshi

AIP Conference Proceedings **1942**, 090031 (2018);
<https://doi.org/10.1063/1.5028946>

SHOW ABSTRACT


 No Access . April 2018

Electronic properties of Fe₃O₄: LCAO calculations and Compton spectroscopy

Kalpana Panwar, Shailja Tiwari and N. L. Heda

AIP Conference Proceedings **1942**, 090032 (2018);
<https://doi.org/10.1063/1.5028947>

SHOW ABSTRACT


 No Access . April 2018

Compton scattering studies and electronic properties of BaTiO₃

Seema Kumari Meena, Komal Bapna, N. L. Heda and B. L. Ahuja

AIP Conference Proceedings **1942**, 090033 (2018);
<https://doi.org/10.1063/1.5028948>

SHOW ABSTRACT


 No Access . April 2018

Electronic and optical properties of MoSe₂ monolayer in the presence of Nb impurity: A first principle study

Sanjeev Kumar, Munish Sharma and P. K. Ahluwalia

AIP Conference Proceedings **1942**, 090034 (2018);
<https://doi.org/10.1063/1.5028949>

SHOW ABSTRACT


 No Access . April 2018

A DFT study of thermodynamic properties of C36 and C14 Fe₂Zr Laves phases

Kawsar Ali, P. S. Ghosh and A. K. Arya

AIP Conference Proceedings **1942**, 090035 (2018);
<https://doi.org/10.1063/1.5028950>

SHOW ABSTRACT


 No Access . April 2018

XPS studies of Mg doped GDC ($\text{Ce}_{0.8}\text{Gd}_{0.2}\text{O}_{2-\delta}$) for IT-SOFC

Deepak Tyagi, P. Koteswara Rao and B. N. Wani

AIP Conference Proceedings **1942**, 090036 (2018);
<https://doi.org/10.1063/1.5028951>

SHOW ABSTRACT


 No Access . April 2018

Study of the electronic structure properties in $\text{Co}_2\text{NbIn/Sn}$ Heusler alloys

Aarti R. Chandra, Vishal Jain, N. Lakshmi, Rakesh
Jain and Vivek Kumar Jain

AIP Conference Proceedings **1942**, 090037 (2018);
<https://doi.org/10.1063/1.5028952>

SHOW ABSTRACT

 No Access . April 2018


Work function tunability of borophene via doping: A first

principle study

Neha Katoch, Munish Sharma, Rajesh Thakur and
P. K. Ahluwalia

AIP Conference Proceedings **1942**, 090038 (2018);
<https://doi.org/10.1063/1.5028953>

SHOW ABSTRACT


 No Access . April 2018

First-principle study of effect of variation of 'x' on the band alignment in $\text{CZTS}_{1-x}\text{Se}_x$

Vipul Chemud and Anjali Kshirsagar

AIP Conference Proceedings **1942**, 090039 (2018);
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Structural and spectroscopic studies on $\text{HoCr}_{1-x}\text{Fe}_x\text{O}_3$ ($x = 0$ and 0.5) compounds

Ganesh Kotnana, V. G. Sathe and S. Narayana
Jammalamadaka

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Effect of Sr-doping on electronic and magnetic properties of $\text{La}_{2-x}\text{Sr}_x\text{CoMnO}_6$

Anasua Khan, Swastika Chatterjee, P. R. Mandal and T. K. Nath

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A first principle study on iron substituted $\text{LiNi}(\text{BO}_3)$ to use as cathode material for Li-ion batteries

Anu Maria Augustine, Vishnu Sudarsanan, Geo Sunny and P. Ravindran

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<https://doi.org/10.1063/1.5028958>

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A first principle study of electronic and optical properties of H, F and Cl passivated triangular silicene nano-flakes

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Strain induced structural and electronic properties of BaReO₃: A DFT study

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 No Access . April 2018

Phonon shift in chemically exfoliated WS₂ nanosheet

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Band gap modulation of graphene by metal substrate: A first principles study

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Electronic structure and hydrogen storage capability of zirconium decorated graphyne

Mansi Pathak, Abhijeet Gangan and Brahmananda Chakraborty

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Band structure of the quaternary Heusler alloys ScMnFeSn and ScFeCoAl

N. Shanthi, Y. N. Teja, Shephine M. Shaji, Shashikala Hosamani and H. S. Divya

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<https://doi.org/10.1063/1.5028965>

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CONTRIBUTED PAPERS H. Single Crystals Growth and Characterization

 No Access . April 2018

Analysis of local symmetry and impurity location of Cu^{2+} ions doped $\text{C}_8\text{H}_{11}\text{KO}_8$ single crystal through EPR technique for site I

K. Juliet Sheela, N. Subbulakshmi and P.
Subramanian

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<https://doi.org/10.1063/1.5028966>

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 No Access . April 2018


Anharmonic vibrational spectroscopy, NBO charges and global chemical reactivity studies on the charge transfer $\text{PDCA}^- \cdot \text{AHMP}^+$ single crystal using DFT calculations

Mohd Faizan, Ziya Afroz, Sheeraz Ahmad Bhat,
Mohamad Jane Alam, Shabbir Ahmad and Afaq

Ahmad

AIP Conference Proceedings **1942**, 100002 (2018);
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 No Access . April 2018

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Rakesh Hajiyani, Bhoomika Jogiya, Chetan Chauhan, Harshkant Jethva and Mihir Joshi

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P. Karuppasamy, Muthu Senthil Pandian and P. Ramasamy

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Muthu Senthil Pandian, P. Karuppasamy, T. Kamalesh, P. Ramasamy and Sunil Verma

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 No Access . April 2018

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 No Access . April 2018

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A. Raja, D. Joseph Daniel, P. Ramasamy, S. G. Singh, S. Sen and S. C. Gadkari

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<https://doi.org/10.1063/1.5028977>

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Third-order nonlinear optical properties of 1,3-bis(3,4-dimethoxyphenyl) prop-2-en-1-one under femtosecond laser pulses

Shivaraj R. Maidur, Parutagouda Shankaragouda Patil and S. Venugopal Rao

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 No Access . April 2018

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Tetrabromo (piperazinium) zincate (II) (TBPZ)

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Growth and characterization of new nonlinear optical 1-phenyl-3-(4-dimethylamino phenyl) prop-2-en-1-one (PDAC) single crystals

K. Ravindraswami, K. Janardhana, Jayaprakash Gowda and B. Narayana Moolya

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<https://doi.org/10.1063/1.5028980>

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No Access . April 2018

Growth and characterization of barium doped triglycine sulphate (BaTGS) single crystals

Jayaprakash Gowda, B. Narayana Moolya and K. Ravindraswami

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<https://doi.org/10.1063/1.5028981>

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 No Access . April 2018

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<https://doi.org/10.1063/1.5028982>

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 No Access . April 2018


Crystal growth and magnetic property of Tetrakis (4-aminopyridine- κ N¹) dichloridocopper(II) monohydrate serine crystals

A. Sinthiya, P. Lalitha, M. Renuga Devi and R. Thiyagarajan

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<https://doi.org/10.1063/1.5028983>

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CONTRIBUTED PAPERS I. Transport Properties

 No Access . April 2018

Electronic, thermoelectric and transport properties of cesium cadmium trifluoride: A DFT study

Jisha Annie Abraham, G. Pagare and Sankar P. Sanyal

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 No Access . April 2018

Transport and dielectric properties of double perovskite $\text{Pr}_2\text{CoFeO}_6$

Arkadeb Pal, A. Singh, V. K. Gangwar and Sandip Chatterjee

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<https://doi.org/10.1063/1.5028985>

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 No Access . April 2018

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 No Access . April 2018

Dielectric and impedance properties of $\text{NiFe}_{1.95}\text{R}_{0.05}\text{O}_4$ (R = Y, Yb and Lu)

Kodam Ugendar, Hanuma Kumar, G. Markaneyulu and G. Neeraja Rani

AIP Conference Proceedings **1942**, 110004 (2018);
<https://doi.org/10.1063/1.5028987>

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 No Access . April 2018

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 No Access . April 2018

Electrical transport properties of nanoplates shaped tungsten oxide embedded poly(vinyl-alcohol) film

Amit Kumar Das, Piyali Chatterjee and Ajit Kumar Meikap

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<https://doi.org/10.1063/1.5028989>

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Optical and dielectric properties of poly(vinyl-alcohol) - Cobalt oxide nanocomposite film

Amit Kumar Das, Himadri Sekhar Tripathi and Ajit Kumar Meikap

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 No Access . April 2018

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V. P. Saleel Ahammad Saleel and R. D. Eithiraj

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 No Access . April 2018

Giant dielectric response in (Sr, Sb) codoped $\text{CaCu}_3\text{Ti}_4\text{O}_{12}$ ceramics: A novel approach

M. K. Pradhan, T. Lakshmana Rao, Lipsarani Karna and S. Dash

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<https://doi.org/10.1063/1.5028992>

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 No Access . April 2018

Bandgap tuning and enhancement of seebeck coefficient in one dimensional GeSe

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<https://doi.org/10.1063/1.5028993>

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 No Access . April 2018

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 No Access . April 2018

High-performance mc-Si ingot grown by modified DS system: Numerical investigation

M. Thiyagarajan, G. Aravindan, M. Srinivasan and
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<https://doi.org/10.1063/1.5028995>

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Ranita Basu, Ranu Bhatt, Anil Bohra, K. P. Muthe
and S. C. Gadkari

AIP Conference Proceedings **1942**, 110013 (2018);
<https://doi.org/10.1063/1.5028996>

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 No Access . April 2018

Electrical transport properties of ternary half-Heusler, LaPdSb

A. Mukhopadhyay and N. Mohapatra

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<https://doi.org/10.1063/1.5028997>

SHOW ABSTRACT

 No Access . April 2018

Study of electrical and magneto-transport properties in $\text{La}_{0.5}\text{Sr}_{0.5}\text{CoO}_3$

Gaurav Sharma, Shekhar Tyagi, R. Rawat and V. G. Sathe

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<https://doi.org/10.1063/1.5028998>

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 No Access . April 2018

Theory of relativistic Brownian motion in the presence of electromagnetic field in (1+1) dimension

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<https://doi.org/10.1063/1.5028999>

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 No Access . April 2018

Fermi surface properties of NbAs₂ studied by de Haas-van Alphen oscillation

Ratnadwip Singha and Prabhat Mandal

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<https://doi.org/10.1063/1.5029000>

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 No Access . April 2018

Theoretical study of thermopower behavior of LaFeO₃ compound in high temperature region

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<https://doi.org/10.1063/1.5029001>

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 No Access . April 2018


A magneto-resistance and magnetisation study of TaAs₂ semimetal

V. Harimohan, A. Bharathi, R. Rajaraman and C. S.

Sundar

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<https://doi.org/10.1063/1.5029002>

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 No Access . April 2018

Thermoelectric power evidence of quantum phase transition

Ashish Kumar Mishra, Krishnan M., Durgesh Singh,
M. Gangrade, S. Shanmukharao Samatham, R.
Venkatesh and V. Ganesan

AIP Conference Proceedings **1942**, 110020 (2018);
<https://doi.org/10.1063/1.5029003>

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 No Access . April 2018

Bipolar ferroelectric fatigue in (K_{0.5}Na_{0.5})(Nb_{0.7}Ta_{0.3})O₃ ceramics and improved fatigue endurance on addition of ZnO

P. Vineetha, B. Shanmuga Priya and K. Venkata
Saravanan

AIP Conference Proceedings **1942**, 110021 (2018);
<https://doi.org/10.1063/1.5029004>

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 No Access . April 2018

Metal insulator transition in nickel substituted FeSi

M. Krishnan, Ashish Mishra, Durgesh Singh, Venkatesh R., Mohan Gangrade and V. Ganesan

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<https://doi.org/10.1063/1.5029005>

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 No Access . April 2018

Structural and impedance spectroscopy of α -Mn₂O₃

Mohit Chandra, Satish Yadav, S. Rayaprol and K. Singh

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<https://doi.org/10.1063/1.5029006>

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 No Access . April 2018

Pressure induced superconductivity in Bi₂Se_{1.2}Te_{1.8} topological insulator

Abhirami S. and Awadhesh Mani

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<https://doi.org/10.1063/1.5029007>

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 No Access . April 2018

**Surface quantum oscillations
and weak antilocalization
effect in topological insulator
(Bi_{0.3}Sb_{0.7})₂Te₃**

Rajashri Urkude, Rajeev Rawat and Umesh
Palikundwar

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<https://doi.org/10.1063/1.5029008>

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 No Access . April 2018

**Electronic and transport
properties of 1D aluminum at
atomic scale**

Prabal Dev Bhuyan, Sanjeev K. Gupta, Yogesh
Sonvane and Ashok Kumar

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<https://doi.org/10.1063/1.5029009>

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 No Access . April 2018

**Magneto-transport in an
interacting single molecular
transistor using Anderson-**


Holstein model

Manasa Kalla and Ashok Chatterjee

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<https://doi.org/10.1063/1.5029010>

SHOW ABSTRACT

 No Access . April 2018


Superconductivity in epitaxial InN thin films with large critical fields

Buddhadeb Pal, Bhanu P. Joshi, Himadri Chakraborti, Aditya K. Jain, Barun K. Barick, Kankat Ghosh, Apurba Laha, Subhabrata Dhar and Kantimay Das Gupta

AIP Conference Proceedings **1942**, 110028 (2018);

<https://doi.org/10.1063/1.5029011>

SHOW ABSTRACT


 No Access . April 2018

Dielectric relaxation behavior in $\text{La}_{1.80}\text{Y}_{0.20}\text{NiMnO}_6$ double perovskite

Mohd. Nasir, Saniya Ayaz, Sunil Kumar, Asokan Kandasami and Somaditya Sen

AIP Conference Proceedings **1942**, 110029 (2018);
<https://doi.org/10.1063/1.5029012>

SHOW ABSTRACT

 No Access . April 2018

An unconventional magnetoresistance in CoFe_2O_4 core- BiFeO_3 shell composite

S. Kuila, S. Tiwary, M. R. Sahoo, A. Barik and P. N. Vishwakarma

AIP Conference Proceedings **1942**, 110030 (2018);
<https://doi.org/10.1063/1.5029013>

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 No Access . April 2018


Study of electrical properties of Sc doped $\text{BaFe}_{12}\text{O}_{19}$ ceramic using dielectric, impedance, modulus spectroscopy and AC conductivity

Surbhi Gupta, S. K. Deshpande, V. G. Sathe and V.

Siruguri

AIP Conference Proceedings **1942**, 110031 (2018);
<https://doi.org/10.1063/1.5029014>

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 No Access . April 2018

Molecular dynamics of acetamide based ionic deep eutectic solvents

H. Srinivasan, P. S. Dubey, V. K. Sharma, R. Biswas,
S. Mitra and R. Mukhopadhyay

AIP Conference Proceedings **1942**, 110032 (2018);
<https://doi.org/10.1063/1.5029015>

SHOW ABSTRACT


 No Access . April 2018

The impedance spectroscopy analysis of complex perovskite $\text{Sr}_2\text{YbSbO}_6$

A. Barua, S. Maity, R. Mondal and S. Kumar

AIP Conference Proceedings **1942**, 110033 (2018);
<https://doi.org/10.1063/1.5029016>

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 No Access . April 2018

Spin transport in oxygen

adsorbed graphene nanoribbon

Vipin Kumar

AIP Conference Proceedings **1942**, 110034 (2018);
<https://doi.org/10.1063/1.5029017>

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No Access . April 2018

Low temperature resistivity plateau and non-saturating magnetoresistance in Type-II Weyl semimetal WP_2

V. Nagpal, P. Kumar, Sudesh and S. Patnaik

AIP Conference Proceedings **1942**, 110035 (2018);
<https://doi.org/10.1063/1.5029018>

SHOW ABSTRACT


 No Access . April 2018

Isotropic charge transport in conducting PEDOT:PSS thin films on pre-strained stretchable substrates

Biporjoy Sarkar, Dillip Kumar Satapathy and Manu Jaiswal

AIP Conference Proceedings **1942**, 110036 (2018);
<https://doi.org/10.1063/1.5029019>

SHOW ABSTRACT


 No Access . April 2018

Dielectric spectroscopy of PMMA-LiClO₄ based polymer electrolyte plasticized with ethylene carbonate EC

P. Pal and A. Ghosh

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<https://doi.org/10.1063/1.5029020>

SHOW ABSTRACT

 No Access . April 2018


Anomalous low temperature resistivity in CeCr_{0.8}V_{0.2}Ge₃

Durgesh Singh, Manju Mishra Patidar, A. K. Mishra, Krishnan M. and V. Ganesan

AIP Conference Proceedings **1942**, 110038 (2018);

<https://doi.org/10.1063/1.5029021>

SHOW ABSTRACT


 No Access . April 2018

Conductivity studies on molybdo-phosphate glasses containing ZnO

C. Renuka, B. Sujatha, N. Sivasankarareddy, R. Viswanatha and C. Narayanareddy

AIP Conference Proceedings **1942**, 110039 (2018);
<https://doi.org/10.1063/1.5029022>

SHOW ABSTRACT


 No Access . April 2018

Structural and electrical properties of Sr doped YCrO₃

Pallavi Saxena and Dinesh Varshney

AIP Conference Proceedings **1942**, 110040 (2018);
<https://doi.org/10.1063/1.5029023>

SHOW ABSTRACT


 No Access . April 2018

Magnetic field induced enhancement of resistance in polycrystalline ZrTe₅

Prakash Behera, Sumit Bera, Manju Mishra Patidar,
Durgesh Singh, A. K. Mishra, Krishnan M., M.
Gangrade, U. P. Deshpande, R. Venkatesh and V.
Ganesan

AIP Conference Proceedings **1942**, 110041 (2018);
<https://doi.org/10.1063/1.5029024>

SHOW ABSTRACT


 No Access . April 2018

Electrical transport properties of spray deposited transparent conducting ortho- Zn₂SnO₄ thin films

R. Ramarajan, K. Thangaraju, R. Ramesh Babu and
D. Paul Joseph

AIP Conference Proceedings **1942**, 110042 (2018);
<https://doi.org/10.1063/1.5029025>

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 No Access . April 2018


Relaxation and transport properties of Li⁺ ion conducting biocompatible material for battery application

Shreedatta Hegde, V. Ravindrachary, S. D.
Praveena, B. Guruswamy, Rohan N. Sagar and
Ganesh Sanjeev

AIP Conference Proceedings **1942**, 110043 (2018);

<https://doi.org/10.1063/1.5029026>

SHOW ABSTRACT


 No Access . April 2018

Effect of disappearance of rhombohedral phase on the dielectric properties of novel $\text{BiFe}_{1-x}\text{Co}_x\text{O}_3$

S. Tiwary, S. Kuila, M. R. Sahoo, A. Barik and P. N. Vishwakarma

AIP Conference Proceedings **1942**, 110044 (2018);
<https://doi.org/10.1063/1.5029027>

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 No Access . April 2018

Temperature dependent electron transport behavior of poly (methyl methacrylate)/silver functionalized reduced graphene oxide films

S. Asha, A. Nimrodh Ananth, G. Vanitha Kumari, G. S. Okram, Sujin P. Jose and M. A. Jothi Rajan

AIP Conference Proceedings **1942**, 110045 (2018);
<https://doi.org/10.1063/1.5029028>

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 No Access . April 2018

Search for thermoelectrics with high figure of merit in half-Heusler compounds with multinary substitution

Mukesh K. Choudhary and P. Ravindran

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<https://doi.org/10.1063/1.5029029>

SHOW ABSTRACT

 No Access . April 2018

Investigation of electronic transport properties of some liquid transition metals

H. P. Patel, Y. A. Sonvane and P. B. Thakor

AIP Conference Proceedings **1942**, 110047 (2018);
<https://doi.org/10.1063/1.5029030>

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 No Access . April 2018

Tuning conductivity in boron nanowire by edge geometry

Prabal Dev Bhuyan, Sanjeev K. Gupta, Yogesh Sonvane and P. N. Gajjar

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<https://doi.org/10.1063/1.5029031>

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 No Access . April 2018

Tracking polaron generation in electrochemically doped polyaniline thin films

S. S. Kalagi and P. S. Patil

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<https://doi.org/10.1063/1.5029032>

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 No Access . April 2018

Bias current dependence of resistivity in $\text{Co}_{0.4}\text{Fe}_{0.4}\text{B}_{0.2}$ ultrathin film prepared by RF magnetron sputtering

Snehal Mandal, Dipak Mazumdar and I. Das

AIP Conference Proceedings **1942**, 110050 (2018);
<https://doi.org/10.1063/1.5029033>

SHOW ABSTRACT

 No Access . April 2018


On the effect of isovalent Bi substitution at the Eu site in the pyrochlore $\text{Eu}_2\text{Ir}_2\text{O}_7$

Prachi Telang, Kshiti Mishra and Surjeet Singh

AIP Conference Proceedings **1942**, 110051 (2018);

<https://doi.org/10.1063/1.5029034>

SHOW ABSTRACT


 No Access . April 2018

Effect of ball milling time on thermoelectric properties of bismuth telluride nanomaterials

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R. Kandulna, R. B. Choudhary and R. Singh

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**CONTRIBUTED PAPERS J.
Semiconductor Physics**


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 No Access . April 2018


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irradiation effects on AlGaN/GaN Schottky diodes and its area dependence

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 No Access . April 2018

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 No Access . April 2018

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 No Access . April 2018

Study on structural and optical properties of $\alpha\text{-(Al}_x\text{Cr}_{7-x})_2\text{O}_3$ ($0 \leq x \leq 1$) solid solutions

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 No Access . April 2018

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<https://doi.org/10.1063/1.5029066>

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<https://doi.org/10.1063/1.5029067>

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 No Access . April 2018

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plane phase engineered $1T'/2H/1T'$ MoS₂

Rajesh Thakur, Munish Sharma, P. K. Ahluwalia
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<https://doi.org/10.1063/1.5029068>

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Superconductivity, Magnetism and
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 No Access . April 2018

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 No Access . April 2018

**Synthesis, morphology and
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 No Access . April 2018


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 No Access . April 2018

Structural, dielectric and magnetic properties of $\text{ZnFe}_2\text{O}_4\text{-Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3$ multiferroic composites

Tanvi Bhasin, Ashish Agarwal, Sujata Sanghi, Manisha Yadav, Muskaan Tuteja, Jogender Singh and Sonia Rani

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<https://doi.org/10.1063/1.5029076>

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 No Access . April 2018

On the possibility of room temperature ferromagnetism on chunk-shape $\text{BaSnO}_3/\text{ZnO}$ core/shell nanostructures

N. Rajamanickam, K. Jayakumar and K. Ramachandran

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 No Access . April 2018

Impact of structural symmetry on magnetization properties in $\text{SrCo}_{0.95}\text{Mn}_{0.05}\text{O}_3$ prepared by sol-gel method

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Exchange bias in multiferroic $\text{Ca}_3\text{Mn}_2\text{O}_7$ effected by Dzyaloshinskii-Moriya interaction

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 No Access . April 2018

Tailoring of magnetic properties of MnAl thin films by protons irradiation

H. Khanduri, S. A. Khan, S. K. Srivastava, J. Link, R.
Stern and D. K. Avasthi

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<https://doi.org/10.1063/1.5029080>

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 No Access . April 2018

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Hole pairing and thermodynamic properties of the two dimensional frustrated t - J model

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 No Access . April 2018

Structural and magnetic properties of $\text{LiNi}_{0.75}\text{Al}_{0.25}\text{O}_2$

M. K. Majee, P. A. Bhoje and A. K. Nigam

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Ultrafast demagnetisation dependence on film thickness: A TDDFT calculation

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 No Access . April 2018

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M. Chandra Dimri, H. Khanduri, A. Mere and R. Stern

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 No Access . April 2018

Structural, magnetic and magnetoreactance studies in $\text{NiFe}_{2-x}\text{R}_x\text{O}_4$ ($x = 0, 0.05$; $R = \text{Y}, \text{Yb}$ and Lu)

Kodam Ugendar, Venkatrao Chunchu, G. Neeraja Rani and G. Markaneyulu

AIP Conference Proceedings **1942**, 130016 (2018);
<https://doi.org/10.1063/1.5029086>

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 No Access . April 2018


Exchange stiffness variation for thermally annealed FeCo thin films

Garima Vashisht, Rajan Goyal and S. Annapoorni

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<https://doi.org/10.1063/1.5029087>

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Magnetic anisotropy studies in magnetostrictive Fe-Co thin films

K. Umadevi, J. Arout Chelvane, A. Talapatra, J.
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<https://doi.org/10.1063/1.5029088>

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 No Access . April 2018

Magnetic and transport properties of Ga-Mn-Co full Heusler alloy

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 No Access . April 2018

Magnetic ground state of the layered honeycomb


compound $\text{Na}_2\text{Co}_2\text{TeO}_6$

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<https://doi.org/10.1063/1.5029090>

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 No Access . April 2018


Rectifying magnetic tunnel diode like behavior in $\text{Co}_2\text{MnSi}/\text{ZnO}/\text{p-Si}$ heterostructure

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<https://doi.org/10.1063/1.5029091>

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 No Access . April 2018


Controlling the motion of solitons in 1-D magnonic crystal

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 No Access . April 2018

Meta-stable magnetic transitions and its field dependence in $\text{Co}_{2.75}\text{Fe}_{0.25}\text{O}_4$ ferrite

Aswathi M. C. and R. N. Bhowmik

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<https://doi.org/10.1063/1.5029093>

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 No Access . April 2018

Magnetocaloric effect in cubic spinel $\text{Co}(\text{Cr}_{0.95}\text{Fe}_{0.05})_2\text{O}_4$

Ram Kumar, S. Rayaprol, Y. Xiao, W. Ji, V. Siruguri and D. Pal

AIP Conference Proceedings **1942**, 130024 (2018);
<https://doi.org/10.1063/1.5029094>

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 No Access . April 2018


On the magnetism and magnetocaloric effect of electron-doped manganite $\text{Er}_{0.15}\text{Ca}_{0.85}\text{MnO}_3$

Moumita Naskar, Sagar Ghorai, S. Prabhakar, R. Rajivgandhi, S. Rayaprol, A. K. Nigam, S. Quezado, S. K. Malik and R. Nirmala

AIP Conference Proceedings **1942**, 130025 (2018);

<https://doi.org/10.1063/1.5029095>

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 No Access . April 2018

Influence of substitution of yttrium in cobalt ferrite on the structural, magnetic and magnetostrictive properties

D. M. Ghone, K. K. Patankar, V. L. Mathe and S. D. Kaushik

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<https://doi.org/10.1063/1.5029096>

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 No Access . April 2018

Effect of spin interactions on the Landé splitting factor in NiFe₂O₄ inverse spinel

T. Kavipriya, B. Santhosh Kumar and C. Venkateswaran

AIP Conference Proceedings **1942**, 130027 (2018);
<https://doi.org/10.1063/1.5029097>

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 No Access . April 2018


Resonant x-ray magnetic

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A. Singh, M. K. Sanyal, J. C. T. Lee, Y. Chen, S. Montoya, E. E. Fullerton and S. Roy

AIP Conference Proceedings **1942**, 130028 (2018);
<https://doi.org/10.1063/1.5029098>

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 No Access . April 2018

Low temperature magnetic properties of GdFeO₃

Pralay Paul, C. L. Prajapat, A. K. Rajarajan and T. V. Chandrasekhar Rao

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<https://doi.org/10.1063/1.5029099>

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 No Access . April 2018

Microwave frequency tuning in heterogeneous spin torque oscillator with perpendicular polarizer: A macrospin study

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 No Access . April 2018

Ferroelectric properties of oxalate and phenanthroline based 1-D single chain molecular magnet
[{Fe^{II}(Δ)Fe^{II}(Λ)}_{0.5}{Cr^{II}(Δ)Cr^{II}(Λ)}_{0.5}(ox)₂(phen)₂]

Pramod Bhatt, M. D. Mukadam, B. P. Mandal and S. M. Yusuf

AIP Conference Proceedings **1942**, 130031 (2018);
<https://doi.org/10.1063/1.5029101>

SHOW ABSTRACT

 No Access . April 2018

Magnetic and magnetocaloric properties of Gd-doped Mn-Ni-Sn alloys

Arup Ghosh and Sunil Nair

AIP Conference Proceedings **1942**, 130032 (2018);
<https://doi.org/10.1063/1.5029102>

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 No Access . April 2018

Enhancement of magnetocrystalline anisotropy of MnBi with Co interstitial impurities

Priti Rani, Ankur Taya and Manish K. Kashyap

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<https://doi.org/10.1063/1.5029103>

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 No Access . April 2018

Renormalized modes in cuprate superconductors

Anushri Gupta, Anita Kumari, Sanjeev K. Verma
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<https://doi.org/10.1063/1.5029104>

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 No Access . April 2018

Influence of heat treatment on superconducting properties of NbZrC alloy: Possible SCRF cavity application

N. K. Sarkar, B. Viswanadh, C. L. Prajapat, P. D.
Babu, G. Ravikumar, R. Tewari and P. K. Mishra

AIP Conference Proceedings **1942**, 130035 (2018);
<https://doi.org/10.1063/1.5029105>

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 No Access . April 2018

Anisotropy in superconducting gap in YBa₂Cu₃O_{7-δ}

Sanjeev K. Verma, Anita Kumari, Anushri Gupta
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AIP Conference Proceedings **1942**, 130036 (2018);
<https://doi.org/10.1063/1.5029106>

SHOW ABSTRACT


 No Access . April 2018

Structural, dielectric and magnetic studies of Mn doped Y-type barium hexaferrite (Ba₂Mg₂Fe₁₂O₂₂)

Md. F. Abdullah, P. Pal, S. R. Mohapatra, C. S.
Yadav, S. D. Kaushik and A. K. Singh

AIP Conference Proceedings **1942**, 130037 (2018);
<https://doi.org/10.1063/1.5029107>

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 No Access . April 2018

Transport characteristics of μ-SQUIDs for probing magnetism

Sourav Biswas, Sagar Paul, Harsh Parashari,
Clemens B. Winkelmann, Hervé Courtois and
Anjan K. Gupta

AIP Conference Proceedings **1942**, 130038 (2018);
<https://doi.org/10.1063/1.5029108>

SHOW ABSTRACT


 No Access . April 2018

Effect of Zr doping on structural, dielectric and magnetic properties of Fe_2TeO_6

P. Pal, Md. F. Abdullah, S. R. Mohapatra, S. D. Kaushik and A. K. Singh

AIP Conference Proceedings **1942**, 130039 (2018);
<https://doi.org/10.1063/1.5029109>

SHOW ABSTRACT


 No Access . April 2018

Crystal structure and magnetic properties of Cr doped barium hexaferrite

Sunil Kumar, Sweety Supriya, Rabichandra Pandey, Lagen Kumar Pradhan and Manoranjan Kar

AIP Conference Proceedings **1942**, 130040 (2018);
<https://doi.org/10.1063/1.5029110>

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 No Access . April 2018

Novel specific heat and magnetoresistance behavior of $Tb_{0.5}Ho_{0.5}Mn_2Si_2$

Swati Pandey, V. Siruguri and R. Rawat

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<https://doi.org/10.1063/1.5029111>

SHOW ABSTRACT


 No Access . April 2018

Interplay of superconductivity and magnetic fluctuations in single crystals of $BaFe_{2-x}Co_xAs_2$

Biplab Bag, Ankit Kumar, S. S. Banerjee, K. Vinod and A. Bharathi

AIP Conference Proceedings **1942**, 130042 (2018);
<https://doi.org/10.1063/1.5029112>

SHOW ABSTRACT

 No Access . April 2018


Investigations on magnetic properties of $Sm_3Ag_{2.55}Al_{8.45}$ compound

S. Nallamuthu, K. Arun, Andrea Dzubinska, Marian Reiffers and R. Nagalakshmi

AIP Conference Proceedings **1942**, 130043 (2018);

<https://doi.org/10.1063/1.5029113>

SHOW ABSTRACT


 No Access . April 2018

Synthesis and magnetic properties of rare-earth free MnBi alloy: A high-energy hard magnetic material

Sanjeev Kumar Sharma, H. R. Prakash, S. Ram and D. Pradhan

AIP Conference Proceedings **1942**, 130044 (2018);
<https://doi.org/10.1063/1.5029114>

SHOW ABSTRACT


 No Access . April 2018

Evidence of magnetodielectric effect in honeycomb oxide $\text{Na}_2\text{Co}_2\text{TeO}_6$

S. Chaudhary, P. Srivastava and S. Patnaik

AIP Conference Proceedings **1942**, 130045 (2018);
<https://doi.org/10.1063/1.5029115>

SHOW ABSTRACT

 No Access . April 2018

Effect of different annealing


condition on the structural and magnetic properties of Mn_2NiGa Heusler alloys

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(2,2'bipyridine) aluminium
Al(Bpy)₂**

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ions for BaMoO₄:Er³⁺-Eu³⁺
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Bulk to nanostructured vanadium pentaoxide-nanowires (V_2O_5 -NWs) for high energy density supercapacitors

Dinesh J. Ahirrao, Mohanapriya. K. and Neetu Jha

AIP Conference Proceedings **1942**, 140066 (2018);
<https://doi.org/10.1063/1.5029197>

SHOW ABSTRACT



No Access . April 2018

Graphene interfaced perovskite solar cells: Role of graphene flake size

Tushar Sakorikar, M. K. Kavitha, Shi Wun Tong,
Pramitha Vayalamkuzhi, Kian Ping Loh and Manu Jaiswal

AIP Conference Proceedings **1942**, 140067 (2018);
<https://doi.org/10.1063/1.5029198>

SHOW ABSTRACT



No Access . April 2018


Synthesis and structural studies on cerium substituted $La_{0.4}Ca_{0.6}MnO_3$ as solid oxide fuel cell electrode material

Monika Singh, Dinesh Kumar and Akhilesh Kumar Singh

AIP Conference Proceedings **1942**, 140068 (2018);

<https://doi.org/10.1063/1.5029199>

SHOW ABSTRACT


 No Access . April 2018

**Reagent ratio dependent
physical properties and
electrochemical performance
of NiO nanoparticles
synthesized using solvent
deficient approach**

R. M. Kore, A. V. Thakur, B. Y. Fugare and B. J. Lokhande

AIP Conference Proceedings **1942**, 140069 (2018);
<https://doi.org/10.1063/1.5029200>

SHOW ABSTRACT


 No Access . April 2018

**Effect of annealing
temperature on the thermal
stress and dislocation density
of mc-Si ingot grown by DS
process for solar cell
application**

S. Sanmugavel, M. Srinivasan, K. Aravinth and P. Ramasamy

AIP Conference Proceedings **1942**, 140070 (2018);
<https://doi.org/10.1063/1.5029201>

SHOW ABSTRACT


 No Access . April 2018

3D hierarchical architecture based on 1D TiO₂ nanorod and 2D MnO₂ nanoflake for high performance supercapacitor electrode

S. Thakur, S. Maiti, A. Acharya, T. Paul, N. Besra, S. Sarkar and K. K. Chattopadhyay

AIP Conference Proceedings **1942**, 140071 (2018);
<https://doi.org/10.1063/1.5029202>

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 No Access . April 2018

Raman analysis of non stoichiometric Ni_{1-δ}O

Paras Dubey, K. K. Choudhary and Netram Kaurav

AIP Conference Proceedings **1942**, 140072 (2018);
<https://doi.org/10.1063/1.5029203>

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 No Access . April 2018

Sn_{1.5}Sb₃Ce_{0.5} as effective anode material for Li ion batteries: Electrochemical and electrical analyses

D. Lakshmi and B. Nalini

AIP Conference Proceedings **1942**, 140073 (2018);
<https://doi.org/10.1063/1.5029204>

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 No Access . April 2018

Optical properties of Dy³⁺ doped YBO₃ phosphor

Ramya G. Nair, Sandeep Nigam, V. Sudarsan and
R. K. Vatsa

AIP Conference Proceedings **1942**, 140074 (2018);
<https://doi.org/10.1063/1.5029205>

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 No Access . April 2018

Lithium ion conducting biopolymer electrolyte based on pectin doped with Lithium nitrate

R. Manjuladevi, P. Christopher Selvin, S.
Selvasekarapandian, R. Shilpa and V. Moniha

AIP Conference Proceedings **1942**, 140075 (2018);
<https://doi.org/10.1063/1.5029206>

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Phosphorene-AsP heterostructure as a potential excitonic solar cell material - A first principles study

M. R. Ashwin Kishore and P. Ravindran

AIP Conference Proceedings **1942**, 140076 (2018);
<https://doi.org/10.1063/1.5029207>

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No Access . April 2018

***In-situ* microwave irradiation synthesis of ZnO-graphene nanocomposite for high- performance supercapacitor applications**

R. Gunaseelan, V. Venkatachalam and A. Antony
Raj

AIP Conference Proceedings **1942**, 140077 (2018);
<https://doi.org/10.1063/1.5029208>

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No Access . April 2018

MoTe₂, A novel anode material for sodium ion battery

Manas Ranjan Panda, Anish Raj K., Qiaoliang Bao
and Sagar Mitra

AIP Conference Proceedings **1942**, 140078 (2018);
<https://doi.org/10.1063/1.5029209>

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 No Access . April 2018

Ab-initio investigations for opto-electronic response of (Cd, Zn)Ga₂Te₄: Promising solar PV materials

Jagrati Sahariya, Amit Soni and Pancham Kumar

AIP Conference Proceedings **1942**, 140079 (2018);
<https://doi.org/10.1063/1.5029210>

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 No Access . April 2018

Improved microstructure and thermoelectric properties of iodine doped indium selenide as a function of sintering temperature

Pallavi Dhama, Aparabal Kumar and P. Banerji

AIP Conference Proceedings **1942**, 140080 (2018);
<https://doi.org/10.1063/1.5029211>

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Electrical and dielectric properties of PVdF-HFP - PMMA - (PC + DEC)- LiClO₄

based gel polymer electrolyte

Khushbu Gohel, D. K. Kanchan and C. Maheshwaran

AIP Conference Proceedings **1942**, 140081 (2018);
<https://doi.org/10.1063/1.5029212>

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 No Access . April 2018

Influence of surface plasmon resonance of Sn nanoparticles and nanosheets on the photoluminescence and Raman spectra of SnS quantum dots

Anita R. Warriar and R. Gandhimathi

AIP Conference Proceedings **1942**, 140082 (2018);
<https://doi.org/10.1063/1.5029213>

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 No Access . April 2018


Electronic structure calculation of Sr_2CoWO_6 double perovskite using DFT+U

Golak Mandal, Dhiraj Jha, A. K. Himanshu, Rajyavardhan Ray, P. Mukherjee, Nisith Das, B. K. Singh, K. Sreenivas, M. N. Singh and A. K. Sinha

AIP Conference Proceedings **1942**, 140083 (2018);

<https://doi.org/10.1063/1.5029214>

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 No Access . April 2018

Realization of highly efficient polymer solar cell based on PBDTTT-EFT and [71]PCBM

Vishal Bharti, Suresh Chand and Viresh Dutta

AIP Conference Proceedings **1942**, 140084 (2018);
<https://doi.org/10.1063/1.5029215>

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Significant enhancement in volumetric and gravimetric capacitance of Cu-TiO₂/PPY composite for supercapacitor application

B. Purty and R. B. Choudhary

AIP Conference Proceedings **1942**, 140085 (2018);
<https://doi.org/10.1063/1.5029216>

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 No Access . April 2018


One-dimensional α -MoO₃

nanorods for high energy density pseudocapacitor

Shibsankar Dutta, Shreyasi Pal and Sukanta De

AIP Conference Proceedings **1942**, 140086 (2018);
<https://doi.org/10.1063/1.5029217>

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Conductivity studies of blend polymer electrolyte system irradiated with swift heavy O⁶⁺ ion beam

Gargi Dave, D. K. Kanchan and F. Singh

AIP Conference Proceedings **1942**, 140087 (2018);
<https://doi.org/10.1063/1.5029218>

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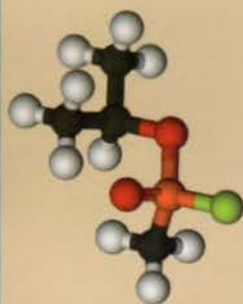
Proceedings of
**14TH DAE-BRNS BIENNIAL
TROMBAY SYMPOSIUM ON
RADIATION & PHOTOCHEMISTRY**

(TSRP-2018)

January 3-7, 2018

Venue

DAE Convention Centre, Anushaktingar,
Bhabha Atomic Research Centre,
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**Board of Research in Nuclear Sciences (BRNS)
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Foreword

It is a pleasure to welcome all the delegates to the 14th DAE-BRNS Biennial *Trombay Symposium on Radiation & Photochemistry* (TSRP-2018) being held during 3-7 January 2018 at DAE Convention Centre, Anushaktinagar, Mumbai. The first one of the series of TSRP was organized by the Indian Society for Radiation and Photochemical Sciences (ISRAPS) in 1992 with the prime objective of promoting the research and education in these two thrust areas. Since then, ISRAPS, in collaboration with Chemistry Group, Bhabha Atomic Research Centre (BARC), Mumbai, has successfully organized thirteen such biennial meetings, which have always been fully funded by the Board of Research in Nuclear Sciences (BRNS), Department of Atomic Energy (DAE). The deliberations on the cutting edge research activities carried out in the radiation and photochemistry disciplines by eminent experts of the field have always attracted overwhelming participation from younger faculties and students, within the country and abroad.

The aim of TSRP-2018 is to provide a common platform for discussions on the recent developments in the frontiers of radiation and photochemistry and allied fields. Over the years, these subject areas are becoming more and more interdisciplinary in nature, with applications in many areas having industrial and societal impact, such as, nuclear energy and waste management, radiation processing of food and industrial products, polymer design and processing, radio-protectors, solar energy conversions, optoelectronics, biology, medicine and atmospheric research. A glance through this book of abstracts will definitely justify the depth of the advanced research in the present time. The TSRP-2018 proceedings will consist of Plenary Lectures, Invited Talks and Poster Presentation by more than 250 delegates. We are sure that the symposium will provide a stimulating environment for intense discussions and exchange of ideas among the researchers, for new collaborative and interdisciplinary research attempts on radiation and photochemistry.

Sincere thanks to BRNS, DAE for generous financial support to the TSRP series of symposia, ISRAPS for its continued support as a co-organiser and to BARC for all the administrative supports. Once again we wish all the delegates a fruitful scientific endeavor and a comfortable stay.

Trombay
03 January, 2018

Organising Committee
TSRP-2018

TSRP - 2018

Program: Scientific Sessions

DAE - BRNS Trombay Symposium on Radiation & Photochemistry

January 3 - 7, 2018

DAE Convention Centre, Anushaktinagar, Mumbai-94

2nd January, 2018

16:00-18:30	Registration (DAE Convention Centre)		
Day 1: Wednesday, 3rd January, 2018			
10:00-12:30	Registration (DAE Convention Centre)		
13:00-14:00	LUNCH		
14:00-14:45	Registration (DAE Convention Centre)		
15:00 - 15:30	Inaugural Session		
Session-I : (15:30-17:00) (Chair: J. P. Mittal)			
15:30 - 16:10	PL-01	Alec M. Wodtke	Imaging transient chemical bond formation by h-atom scattering from graphene
16:10 - 16:50	PL-02	Y. Yoshida	Decomposition process of alkanes studied by femtosecond pulse radiolysis
16:50 - 17:00			About BRNS
17:00-17.30	HIGH TEA		
Session-II : 17:30-19:00 (Chair: T. Mukherjee)			
17:30 - 18:00	IT-01	Koichi Iwata	Characterizing lipid bilayer membranes with time-resolved spectroscopies - viscosity and polarity
18:00 - 18:30	IT-02	Keisuke Tominaga	Broadband dielectric spectroscopy on proteins and lipid bilayers from sub-GHz to THz
18:30 - 19:00	IT-03	Tusar Bandyopadhyay	Stabilization of vaccinal RNA in D ₂ O and eliminating the cold chain: evidence from metadynamics and THz spectroscopy-inspired MD simulations
19:00-20:00	Annual General Body Meeting of ISRAPs		
20:00	DINNER		

Day 2: Thursday, 4th January, 2018

Session-II : 9:30-11:10 (Chair: B. S. M. Rao) .

09:30 - 10:10	PL-03	Nicholas J. B. Green	Correlation effects in scavenging kinetics
10:10 - 10:40	IT-04	C. Sicard-Roselli	Can radical production quantification help us in understanding gold nanoparticle radiosensibilization mechanism?
10:40 - 11:10	IT-05	S. Le Caër	Ageing processes in lithium-ion batteries deciphered thanks to radiolysis
11:10-11:30	TEA		

Session-III: 11:30 - 13:10 (Chair: A. K. Singh)

11:30 - 12:10	PL-04	Ayyappanpillai Ajayaghosh	Photophysical properties and applications of fluorescent n-gelators
12:10 - 12:40	IT -06	Masahide Terazima	Reaction dynamics of photo-induced protein-DNA interaction
12:40 - 13:10	IT -07	Jyotirmayee Mohanty	Rendezvous with cucurbituril-functionalized supramolecular assemblies: platform for unlimited opportunities
13:10-14:10	LUNCH		

Session-IV : 14:10 - 16:20 (Chair: A. Samanta & S. K. Sarkar)

14:10 - 14:50	PL-05	T. Tahara	Primary process of photo-responsive proteins studied by femtosecond time-domain Raman spectroscopy
14:50 - 15:20	IT-08	Shoichi Yamaguchi	Heterodyne-detected SFG spectroscopy of ice
15:20 - 15:50	IT-09	Hideaki Shirota	An fs-RIKES study of orientational dynamics in nondipolar solutions
15:50 - 16:20	IT-10	Santhosh Chidangil	Suicidal death of erythrocytes: a micro-Raman spectroscopy study
16:20-16:40	TEA		

Session-V :16:40-18:55 (Chairs: Tapas Chakraborty & S. Wategaonkar)

16:40 - 17:10	IT-11	A.J. Orr-Ewing	Atmospherically significant reactions of criegee intermediates
17:10 - 17:40	IT-12	B. Rajakumar	Measurement of absorption cross-sections and kinetics of radicals relevant to the Earth's atmosphere using cavity ring down spectroscopy

17:40 - 18:10	IT-13	A. Terasaki	X-ray absorption spectroscopy of size-selected cerium-oxide cluster ions
18:10 - 18:40	IT-14	S. Ito	On-off switching of fluorescence of diarylethene derivatives by one-color photo-irradiation
18:40 - 18:55			Anatech Instruments
19:00	BANQUET DINNER		

Day 3: Friday, 5th January, 2018

Session-VI: 9:30 - 11:00 (Chair: Keisuke Tominaga)

9:30 - 10:00	IT-15	M. Ichihashi	Formation of cluster complexes of size-selected cobalt cluster ion and helium cluster for infrared photodissociation spectroscopy
10:00-10:30	IT-16	Yuki Nagata	TMAO: Hydration mechanism and interaction with urea viewed by combined ab initio molecular dynamics simulation and time-resolved infrared spectroscopy
10:30-11:00	IT-17	M. Okuda	Vibrational frequency fluctuations of solutes in water studied by two-dimensional infrared spectroscopy
11:00-11:30	TEA		

Session-VII: 11:30 - 13:30 (Chairs: H. Pal & Amitava Das)

11:30-12:00	IT-18	H. Ikeda	Thermoluminescence and new type oled based on triplet-triplet fluorescence of organic biradical
12:00 - 12:30	IT-19	Parameswar Krishnan Iyer	AIE-Active luminoogens for multiple applications
12:30 - 13:00	IT-20	Vandana Bhalla	Aggregation induced emission enhancement materials: unlimited possibilities
13:00-13:30	IT-21	Manoj Kumbhakar	Exploring quenching interactions with single molecule sensitivity
13:30-14:30	LUNCH		

Session-VIII: 14:30-16:45 (Chairs: B. N. Jagatap & D. K. Palit)

14:30 - 15:00	IT-22	Abhijit Saha	Functional semiconductor nanocrystals: synthesis, characterization and biological interfacing
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15:00 - 15:30	IT-23	Hirendra N. Ghosh	Optimization of photo-conversion efficiency in quantum dot solar cell through feedback of ultrafast spectroscopic data
15:30 - 16:00	IT-24	Amitava Patra	Graphene -nano hybrid for photon harvesting
16:00 - 16:30	IT-25	Seji Akimoto	Changes in excitation energy transfer processes in photosynthesis under different environments
16:30 - 16:45			Atos Instruments
16:45- 18:15	TEA & Poster Session I (Chairs: D. B. Naik & Awadhesh Kumar)		
PC-01 to PC-72 & RC- 01 to RC-17			
18:45 - 20:00	Cultural Program		
20:00	DINNER		

Day 4: Saturday, 6th January, 2018

Session-IX: 9:30-11:00 (Chairs: K. I. Priyadarsini & C. T. Aravindakumar)			
09:30 -10:00	IT-26	Amitava Adhikary	Formation and reactions of guanine cation radical in DNA-models
10:00 - 10:30	IT-27	Nandita Maiti	Engineering plasmonic nanostructures for raman spectroscopic applications
10:30-11:00	IT-28	E. Brun	Gold nanoparticles as radiosensitizing agents: From physical chemistry to cellular experiments
11:00-11:30	TEA		

Session-X: 11:30-13:10 (Chairs: B. S. Tomar & Anil Kumar)			
11:30 - 12:00	IT-29	Ashutosh Das	Radioisotopes for diagnosis and therapy
12:00 - 12:30	IT-30	Sandip Basu	Clinical applications of lutetium based radiopharmaceuticals in molecular targeted therapy of cancer
12:30 - 13:00	IT-31	A. Kunwar	Dihydroxy-1-selenolane (DHS _{red}) protects cells from radiation-induced mitotic death: role of glutathione peroxidase (GPx)
13:00-13:10			Edinburgh Inst
13:10-14:10	LUNCH		
14:10- 16:00	Poster Session II & TEA (Chairs: D. B. Naik & Awadhesh Kumar)		
PC-73 to PC-144 & RC- 18 to RC-33			

Session-XI: 16:00 -18:15 (Chair: S. K. Ghosh)			
16:00 -16:30	IT-32	Ranjan Das	Insight into photophysical and photochemical dynamics through electron paramagnetic resonance spectroscopy
16:30 - 17:00	IT-33	D. K. Maity	Hydration of acids: Understanding processes at molecular level
17:00 -17:30	IT-34	G.Naresh Patwari	Electrostatic vs dispersion in intermolecular clusters
17:30 - 18:00	IT-35	S. Sen Gupta	OH formation in photodissociation of epoxides - an unusual reaction channel
18:00 - 18:15	ST-01	M. A. Jhonsi	Fuel waste to nanostructured fluorescent carbon dots for multifarious applications
20:00	DINNER		

Day 5: Sunday, 7th January, 2018

Session-XII: 9:30-11-00 (Chair: S. Kapoor)			
09:30 - 10:00	IT-36	Manmohan Kumar	Radiation based synthesis of glycopolymeric hydrogels and its application in targeted drug delivery
10:00-10:30	IT-37	R. Puspallata	Radiolysis studies for advanced heavy water reactor
10:30 -11:00	IT-38	K. A. Dubey	Radiation processed advanced piezoresistive and chemiresistive sensors
11:00-11:30	TEA		

Session-XIII: 11:30-13:30 (Chair: P. D. Naik)			
11:30 -12:00	IT-39	V. Sudarsan	Electro-luminescence from inorganic materials in the powder form
12:00 - 12:15	ST-02		
12:15 -13:00			ISRAPS Poster Award Distribution & Concluding Session
13:00-14:30	LUNCH		
20:00-	DINNER		

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- PL-02 Decomposition Process of Alkanes Studied by Femtosecond Pulse Radiolysis
T. Kondoh, M Gohdo, K, Kan, J. Yang and Y. Yoshida
- PL-03 Correlation effects in scavenging kinetics
Nicholas J. B. Green, Amit Agarwal and Eyad H. Al-Samra
- PL-04 Photophysical Properties and Applications of Fluorescent π -Gelators
Ayyappanpillai Ajayaghosh
- PL-05 Primary Process of Photo-Responsive Proteins Studied By Femtosecond Time-Domain Raman Spectroscopy
T. Tahara

Invited Talks (IT)

- IT-01 Characterizing lipid bilayer membranes with time-resolved spectroscopies - viscosity and polarity
Koichi Iwata
- IT-02 Broadband Dielectric Spectroscopy on Proteins and Lipid Bilayers From Sub-GHz To THz
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- IT-03 Stabilization of Vaccinal RNA in D₂O and Eliminating the Cold Chain: Evidence from Metadynamics and THz Spectroscopy-Inspired MD Simulations
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- IT-04 Can radical production quantification help us in understanding gold nanoparticle radiosensibilization mechanism?
E. Brun and C. Sicard-Roselli
- IT-05 Ageing Processes in Lithium-Ion Batteries Deciphered thanks to Radiolysis
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- IT-07 Rendezvous with Cucurbituril-Functionalized Supramolecular Assemblies: Platform for Unlimited Opportunities
Jyotirmayee Mohanty

- IT-08 Heterodyne-Detected SFG Spectroscopy of Ice
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- IT-09 An fs-RIKES Study of Orientational Dynamics in Nondipolar Solutions
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Niranjan Meher, P. Gopikrishna, Akhtar Hussain Malik and Parameswar Krishnan Iyer
- IT-20 Aggregation Induced Emission Enhancement Materials: Unlimited Possibilities
Vandana Bhalla
- IT-21 Exploring Quenching Interactions With Single Molecule Sensitivity
Manoj Kumbhakar
- IT-22 Functional Semiconductor Nanocrystals: Synthesis, Characterization and Biological Interfacing
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- IT-23 Optimization of Photo-conversion Efficiency in Quantum Dot Solar Cell through Feedback of Ultrafast Spectroscopic Data
Hirendra N. Ghosh
- IT-24 Graphene -Nano Hybrid for Photon Harvesting
Amitava Patra
- IT-25 Changes in Excitation Energy Transfer Processes in Photosynthesis Under Different Environments
S. Akimoto, S. Aikawa and A. Kondo
- IT-26 Reactions of Guanine Cation Radical in DNA-models
Amitava Adhikary and Michael D. Sevilla
- IT-27 Engineering Plasmonic Nanostructures for Raman Spectroscopic Applications
Nandita Maiti Ridhima Chadha, Abhishek Das and Sudhir Kapoor
- IT-28 Gold nanoparticles as radiosensitizing agents: from physical chemistry to cellular experiments
C. Tisseyre, Y. Sebti, E. Brun and C. Sicard-Roselli
- IT-29 Radioisotopes for Diagnosis and Therapy
Ashutosh Dash
- IT-30 Clinical Applications of Lutetium Based Radiopharmaceuticals in Molecular Targeted Therapy of Cancer
Sandip Basu
- IT-31 Dihydroxy-1-Selenolane (DHS_{red}) Protects cells from Radiation-Induced Mitotic Death: Role of Glutathioneperoxidase (GPx)
A. Kunwar, P. Verma, M. Iwaoka and K.I. Priyadarsini
- IT-32 Insight Into Photophysical and Photochemical Dynamics Through Electron paramagnetic Resonance Spectroscopy
Ranjan Das
- IT-33 Hydration of Acids: Understanding Processes at Molecular Level
D.K. Maity and Parvathi K.
- IT-34 Electrostatics Vs. Dispersion in Intermolecular Clusters
G. Naresh Patwari
- IT-35 OH Formation in Photodissociation of Epoxides - an Unusual Reaction Channel
S. Sen Gupta A. Kumar, P. D. Naik and P. N. Bajaj
- IT-36 Radiation Based Synthesis of Glycopolymeric Hydrogels and its Application in Targeted Drug Delivery
Juby K. Ajish and Manmohan Kumar
- IT-37 Radiolysis Studies for Advanced Heavy Water Reactor
R. Puspallata, D. Mal, S. Rangarajan and S. Velmurugan

- IT-38 Radiation Processed Advanced Piezoresistive and Chemiresistive Sensors
K. A. Dubey R.K. Mondal, Y. K. Bhardwaj and L. Varshney
- IT-39 Electro-Luminescence From Inorganic Materials in the Powder Form
V. Sudarsan

Short Talks (ST)

- ST-01 Fuel Waste to Nanostructured Fluorescent Carbon Dots for Multifarious Applications
M. Asha Jhonsi

Photochemistry Posters (PC)

- PC-001 Selective Photochemistry by Tuning Excitation Wavelength: A Time-Resolved Study
Ravi Kumar Venkatraman and Andrew J Orr-Ewing
- PC-002 Investigation of Twisted Intramolecular Charge Transfer Fluorescence Properties of Trans-2-[4-(Dimethylamino)Styryl]Benzothiazole in Order to Elucidate the Protein-Surfactant Aggregates
Sayantan Halder, Sunita Kumari, Sugam Kumar, Vinod Kumar Aswal and Subit Kumar Saha
- PC-003 Early Stage of Electron Hydration Studied with Femtosecond Time-Resolved Visible-Near IR Spectroscopy with Multichannel Detection
S. Okino T. Takaya and K. Iwata
- PC-004 Determination of Ground State and Excited State Dipole Moments of DTYMC: Solvatochromic Shift Method
Shivaprasadagouda Patil, Vani R. Desai, Shirajahammad M. Hunagund, Malatesh S. Pujar, Mahantesha Basanagouda and Ashok H. Sidarai
- PC-005 Molecular Origin of Reactive and Non-Reactive Excited States of A Light-Driven Sodium Ion Pump Rhodopsin
S. Tahara S. Takeuchi, R. Abe-Yoshizumi, K. Inoue, H. Ohtani, H. Kandori and T. Tahara
- PC-006 Photophysics of Cross Conjugated Eneidyne: Effect of Peripheral Ring Sizes on Aggregate Emission
Anuja Singh, Avik Kumar Pati and Ashok K. Mishra
- PC-007 Enhancement of Fecal Pigment Fluorescence by Zn(II): Understanding the Photophysics Towards Water Quality Monitoring
Swayam Prakash, Suraj K. Panigrahi, Martin Wagner, Rebecca Dorner, Wido Schmidt and Ashok K. Mishra

- PC-008 Development of Ultrafast Temporally Gated Fluorescence Imaging Method By Using Stimulated Emission
S. Nakamura, M. Muramatsu, S. Ito and H. Miyasaka
- PC-009 Photophysical Response of ESPT and ESIPT Molecules as a Tool to Understand the Tween 20: Cholesterol (1:1) Niosome Membrane
Jhili Mishra and Ashok Kumar Mishra
- PC-010 Colorimetric and Fluorimetric Sensing of CN^- by Naphthol Derivative and its Live Cell Imaging
Y. Singh, I. R. Siddiqui and T. Ghosh
- PC-011 Colorimetric and Fluorescent Probe for Cyanide in Solution, Test Strips and Live Cell Imaging
Y. Singh and T. Ghosh
- PC-012 A Novel Colorimetric Probe for Vitamin B_1 Detection and Applications to Biofluid Analysis
P. V. Anbhule and U. R. Kondekar
- PC-013 Quantum Dots Based "on-off" Fluorescence Probe for Selective Detection of Cu^{2+} Ions—
S.P. Pawar and G.B. Kolekar
- PC-014 Probing the Interactions of a Psoralen Derivative with G-Quadruplex DNA
S. Paul and A. Samanta
- PC-015 Luminescence Tuning and Exciton Dynamics of Mn-Doped CsPbCl_3 Nanocrystals
Apurba De, Navendu Mondal and Anunay Samanta
- PC-016 Solute Rotation and Translation Dynamics in an Ionic Deep Eutectic Solvent Based on Choline Chloride
S. S. Hossain and A. Samanta
- PC-017 Insight into the Photoluminescence of Zero-Dimensional Perovskite Related Cs_4PbBr_6 Microdisks
Sudipta Seth and Anunay Samanta
- PC-018 Kinetic Investigation on the Reaction of Phenyl (C_6H_5) Radicals with A Series of Aldehydes: A Theoretical Study
Parth Gupta and B. Rajakumar
- PC-019 Thermochemistry and Kinetic Studies on the Autoignition Chemistry of 2-Methyltetrahydrofuran: A Computational Study
S. Kuzhanthaivelan and B. Rajakumar
- PC-020 Experimental and Computational Kinetic Investigations on the Chlorine Atom Initiated Photo-Oxidation Reaction with Ethyl Methacrylate, in the Conditions Relevant to the Troposphere
Avinash Kumar and B. Rajakumar

- PC-021 Kinetic Study on the Atmospheric Fate of Two Biodiesel Constituents: an Experimental and Computational Study
Revathy Kaipara and B. Rajakumar
- PC-022 Exploring the coherent interaction in a hybrid system of Hollow gold nanoprisms and molecular exciton
K. Das, B. Hazra and M. Chandra
- PC-023 Photo Physical Behaviour of Systematically Substituted (Di-2-Pyridylaminomethyl) Benzene Ligands
Mostafa Aatur Rohman and Sivaprasad Mitra
- PC-024 Photophysical Behavior of Coumarin Derivatives and Their Inhibitory Effect on Ache Activity
Prayasee Baruah and Sivaprasad Mitra
- PC-025 Modulatory Effect of Colloidal Nanoparticles on Lysozyme-Drug Interaction
Imochasingh Rajkumar, Vikash K. Sonu and Sivaprasad Mitra
- PC-026 Spectroscopic Studies on Ag, Au And Au-Ag Nanoclusters Prepared By Microwave Irradiation Technique
N. Basu and D. Mandal
- PC-027 Selective Solvent Assisted Intermolecular Double Proton Transfer Dynamics of Alloxazine
M. Mal and D. Mandal
- PC-028 Design of Chlorin e6 Decorated Chitosan Nanogel Through Iono Nic Gelation for Cardiac Drug Delivery
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- PC-029 Photochemical Hydrogen Production Using A Polypyridyl Ruthenium(II) Photosensitizer
A. Anish Babu and K. Swarnalatha
- PC-030 Ruthenium(II) Sensitizers Containing Schiff Base Furic Hydrazide as Ligand for Dye Sensitized Solar Cell Application
S. Kamalesu and K. Swarnalatha
- PC-031 Pyrene Based AIEgen for Explosive Detection
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- PC-032 Electron Transfer Cascade Structure for QSSC Applications
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- PC-035 Characterisation of Amino Acid Based Carbon Quantum Dots by Sum Frequency Generation Spectroscopy
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- PC-036 Probing Interfacial Structure of Polyethylenimine Derivative by Nonlinear Vibrational Spectroscopy
Harsharan Kaur, Narinder Singh and Kailash C. Jena
- PC-037 Long Lived Charge Separated State and AIE Effect in Vinylbenzotrile Substituted Anthracene
Ayan Bhattacharyya, Partha Malakar and Edamana Prasad
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C. V. Maridevarmath, Lohit Naik and G. H. Malimath
- PC-039 Energy Transfer Studies Between Derivatives of 1,3,4-Oxadiazoles & C-334 in Liquid & Polymer Media
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Manjari Chakraborty and Moloy Sarkar
- PC-041 Interaction of Core-Shell Quantum Dots with Organic Aggregates Through Resonance Energy Transfer
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- PC-042 Probing Micro-Environment of Endoplasmic Reticulum of a Live Cell
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- PC-052 Photoluminescence Studies on Dy³⁺ Doped Y₃BO₆ Phosphor
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18th International Conference on Radiation Effects in Insulators (REI-18) Dates: 26th to 31st October, 2015

Edited by D.K. Avasthi, A. Tripathi, T. Som, D. Kanjilal, C. Trautmann

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Editorial



The Eighteenth International Conference on Radiation Effects in Insulators (REI-18) was held during October 26–31, 2015 in Jaipur, India. The conference was organized jointly by Inter-University Accelerator Centre, New Delhi, Malviya National Institute of Technology, Jaipur, Vivekanand Global University, Jaipur in cooperation with the International Atomic Energy Agency, IAEA, Vienna and was supported by the Ion Beam Society of India.

The biennial REI conference has a long successful history and is one of the most prominent conference series dedicated to research on radiation effects in insulators and non-metallic materials. The REI conference was held in India for the first time. Since its first edition in 1981 in Arco, Italy, REI has been the international forum to present and discuss the latest achievements in the field of modification of insulating materials through different kinds of radiations (ions, electrons, photons, etc.). The last conference in the series was held in Helsinki, Finland (2013).

We were pleased to welcome 194 participants from 20 different countries. We received in total 269 abstracts. The scientific programme included 14 invited talks and 39 selected oral presentations. The other papers were presented in two extended poster sessions. As encouragement for young researchers, the best poster and the best oral presentations from research scholars were awarded prizes by the Ion Beam Society of India (IBSI).

For the conference proceedings, we received 75 manuscripts and 51 of them were finally accepted for publication after refereeing. We would like to thank all the referees for their timely and thorough work. We would also like to acknowledge continuous support from Mrs. Kreeti Saravanan (Elsevier).

We greatly acknowledge the generous financial support of various agencies. In the frame work of the cooperation agreement, the International Atomic Energy Agency, IAEA provided financial assis-

tance to some participants from member states under the IAEA's Technical Cooperation Programme. We would also like to thank various sponsors such as Bruker, India, Gatan, Dreebit ion beam Technology, Dresden, VT Vacuum Technology Pvt, Pfeiffer Vacuum India Ltd, Labindia Pvt Ltd and Hind High Vacuum Pvt Ltd.

We highly appreciated the support by the members of the International Committee in particular for their invaluable suggestions regarding the selection of invited and oral speakers, recommending suitable scholars for the IBSI prizes and many other aspects of the conference. We also take this opportunity to acknowledge the active support of the members of the National Advisory Committee, Programme Committee, Local Organizing Committee, as well as several other colleagues. Last but not the least, we would like to thank all participants for making the conference such a successful event.

The next conference, REI-19, will be organized by our French colleagues G. Sattonnay, A. Gentils, L. Thomé, J.-P. Crocombette, and N. Ollier and will take place in Versailles, France, July 2–7, 2017. We are looking forward to seeing you all there.

Guest Editors

D.K. Avasthi

A. Tripathi

T. Som

D. Kanjilal

C. Trautmann

BEAM INTERACTIONS WITH MATERIALS AND ATOMS

Nuclear Instruments and Methods in Physics Research – Section B

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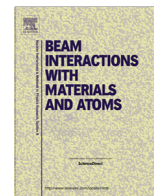
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Electronic sputtering of vitreous SiO₂: Experimental and modeling results



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ABSTRACT

The irradiation of solids with swift heavy ions leads to pronounced surface and bulk effects controlled by the electronic energy loss of the projectiles. In contrast to the formation of ion tracks in bulk materials, the concomitant emission of atoms from the surface is much less investigated. Sputtering experiments with different ions (⁵⁸Ni, ¹²⁷I and ¹⁹⁷Au) at energies around 1.2 MeV/u were performed on vitreous SiO₂ (a-SiO₂) in order to quantify the emission rates and compare them with data for crystalline SiO₂ quartz. Stoichiometry of the sputtering process was verified by monitoring the thickness decreases of a thin SiO₂ film deposited on a Si substrate. Angular distributions of the emitted atoms were measured by collecting sputtered atoms on arc-shaped Cu catcher foils. Subsequent analysis of the number of Si atoms deposited on the catcher foils was quantified by elastic recoil detection analysis providing differential as well as total sputtering yields. Compared to existing data for crystalline SiO₂, the total sputtering yields for vitreous SiO₂ are by a factor of about five larger. Differences in the sputtering rate and track formation characteristics between amorphous and crystalline SiO₂ are discussed within the frame of the inelastic thermal spike model.

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1. Introduction

Vitreous silica (a-SiO₂) is widely used in industrial applications, e.g., as wave guide for light, for electronic devices in radiative environment such as in nuclear power plants and satellites in space. It is also the main component of glass material for embedding nuclear waste [1]. Moreover amorphous silica serves as a model system to better understand the response of glasses to ionizing radiation [2–4]. Several studies concentrated on defect creation and structural modifications in a-SiO₂ induced by swift heavy ions [5–10]. Structural modifications and track phenomena by ion irradiations in a wide energy range from about 1 MeV up to 1 GeV are summarized in a recent review [11]. The irradiation with swift heavy ions leads not only to track formation but also to the emission of atoms from the surface [12]. Experimental on-line observation of track formation in bulk material is difficult due to the short time scales and nanometric volumes involved. Sputtered atoms, however, can act as probes because they are emitted within a time window of 10⁻¹³ to ~3 × 10⁻¹¹ s

even before the deposited energy is fully dissipated [13]. Sputtering experiments may thus provide information on a time period when the atoms are still in motion. The objective of this paper is

- (i) to summarize previous sputtering results performed on a-SiO₂ [14–19] using ions in the electronic energy loss (S_e) regime below 15 keV/nm,
- (ii) to perform electronic sputtering experiments in order to extend existing data to larger energy loss values and use the catcher technique to deduce the angular distribution of the emitted Si atoms,
- (iii) to repeat some experiments with S_e < 15 keV/nm in order to make a link with previous sputtering measurements,
- (iv) to measure the thickness decrease of a-SiO₂ target in order to verify the stoichiometry of the particle emission [16,17],
- (v) to determine the sticking coefficient of Si deposited on two different catchers (Cu and Ge),
- (vi) to model the sputtering yield using the inelastic thermal spike and compare the results obtained earlier for crystalline SiO₂ quartz [20].

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2. Previous sputtering experiments of a-SiO₂ irradiated by swift heavy ions

Earlier sputtering experiments on a-SiO₂ were performed with ions of $S_e < 15$ keV/nm [14–19]. The atomic species were collected on a flat carbon catcher mounted above the a-SiO₂ target [14,16,17]. The ion beam incidence was normal to the surface (i.e. the angle between beam and surface was $\alpha = 90^\circ$). The number of collected Si atoms on the carbon catcher was measured by elastic recoil detection analysis (ERDA) by Qiu et al. [14]. Matsunami et al. analyzed the sputtered Si and O atoms by Rutherford backscattering (RBS) [16,17]. Matsunami et al. [16,17] determined the sticking coefficient of Si and O on a carbon catcher to be in the order of 0.4. This information allowed them to deduce the total sputtering rate, i.e., the number of sputtered particles per incoming ion. They also verified that the particle emission is stoichiometric, i.e., the number of collected O species on the catcher is two times larger than number of collected Si species (see Table 1). Using RBS analysis, Chaumont et al. determined sputtering yields by measuring the thickness decreases of thin a-SiO₂ films irradiated with C₄ and C₈ clusters of few MeV [19]. Sputtering was also quantified via the decrease of the O content in thin a-SiO₂ films by monitoring either ¹⁸O [15] or ¹⁶O [18] during ERDA analysis. In contrast to all other measurements, the latter experiment was performed under grazing beam incidence (α between 7° and 25°). For this review, we concentrate on sputtering experiments performed with ions in equilibrium charge state (for ions of non-equilibrium charge state the electronic energy loss is not well defined and cannot be calculated by standard codes such as SRIM [21]). To compare the sputtering results of irradiations performed under different angles of beam incidence, the measured yields were normalized by applying a sine power law $(\sin \alpha)^{-1.65 \pm 0.25}$ as deduced earlier by Assmann et al. [12] based on a series of sputtering experiments under various angles of beam incidence. To determine the sputtering rate for normal beam incidence, we apply this power law to all results obtained under non-perpendicular ion irradiation. The total sputtering yield is taken as the sum of the total number of sputtered O and Si atoms. In cases when only the yield of Si or O could be determined, stoichiometric sputtering is assumed. Thus the total yield is provided by multiplying the measured Si yield by 3 or the measured O yield by 1.5. The total yields of all considered earlier sputtering experiments [14–19] are reported in Table 1 and in Fig. 1. The yield data from the different experiments are in good agreement. As expected, the total yield increases as a function of electronic energy loss. Only the data point from the irradiation

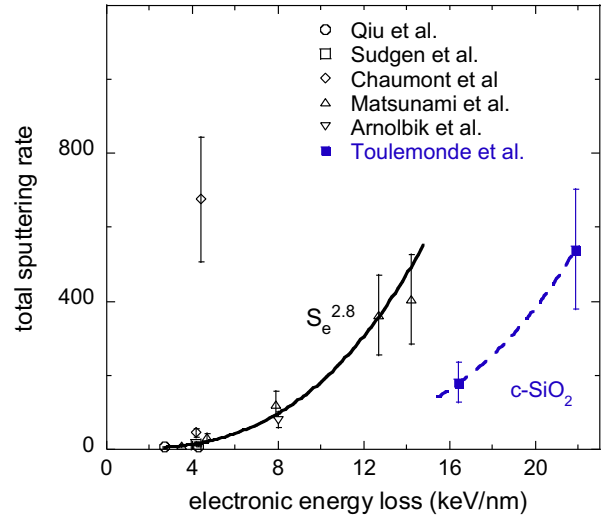


Fig. 1. Total sputtering rate of amorphous SiO₂ as a function of electronic energy loss of the bombarding ions as measured by Qiu et al. [14], Sugden et al. [15], Chaumont et al. [19], Matsunami et al. [16,17], Arnoldbik et al. [18] and for crystalline SiO₂ reported by Toulemonde et al. [20].

with C₈ clusters [19] is far out of the systematics. At present, the origin of this large deviation is not clear. To confirm the huge difference in sputtering yields induced by different C cluster sizes of similar energy loss of $S_e \sim 4.5$ keV/nm, this experiment should be crosschecked. In the following, we do not include this specific point in our considerations.

Amorphous materials are known to be more sensitive [22] than the same material in its crystalline phase [23]. Track radii in a-SiO₂ [4,8] are larger than in crystalline SiO₂ (c-SiO₂) [24,25]. At a beam energy of ~ 1 MeV/u and an electronic energy loss of 15 keV/nm, the track radius in a-SiO₂ is equal to ~ 5.4 nm [4,8], which is by a factor of 1.2 larger than in c-SiO₂ [24] (corresponding to a damage cross section larger by a factor of 1.5). The higher sensitivity of a-SiO₂ is also reflected by higher sputtering rates. At $S_e = 15$ keV/nm, e.g., the experimentally deduced total sputtering yield is ~ 690 for a-SiO₂, whereas the yield extrapolated for the same S_e gives only ~ 150 for c-SiO₂ (Fig. 1) [20]. Sputtering of a-SiO₂ seems to be by almost a factor of 5 larger than in c-SiO₂. Compared to the difference in damage cross section, sputtering appears to be more sensitive to the structure of SiO₂.

Table 1

Resume of previous sputtering experiments of a-SiO₂ with incident ions in equilibrium charge state: (a) references, (b) incident ions and energy, (c) electronic energy loss of ions according to SRIM-2010 [21], (d) angle of beam incidence with respect to the sample surface, (e) analyzed sputtered species (f) measured sputtering yield of respective species, (g) total Si yield corrected for $\alpha = 90^\circ$ by $Y_{\text{tot}}(90^\circ) = Y_{\text{tot}}(\alpha) \sin(\alpha)^{-1.65}$, (h) total sputtering yield (Si + O) for $\alpha = 90^\circ$ assuming stoichiometric emission of Si and O.

a	b	c	d	e	f	g	h	
Ref.	Ion Energy (MeV)	S_e (keV/nm)	α deg	Sputtered species	$Y_{\text{tot}}(\alpha)$ of species (e)	Corrected $Y_{\text{tot}}(\alpha = 90^\circ)$ for Si	Integrated $Y_{\text{tot}}(\alpha = 90^\circ)$ for Si+O	
Qiu et al. [14]	Cl 5	2.7	90	Si	1.7 ± 0.2	No	5.1 ± 0.6	
	Cl 20	4.3	90	O	2.9 ± 0.4	No	7.7 ± 1.0	
Sugden et al. [15]	Cl 30	4.2	20	O	56 ± 5	9.5 ± 2.0	14 ± 3	
Matsunami et al. [16,17]	S 80	3.5	90	Si	3.2 ± 1	No		
				O	6.5 ± 2	No	9.7 ± 4	
	Ar 60	4.7	90	Si + O	32 ± 9	No	32 ± 9	
	Ni 90	7.9	90	Si	38 ± 7	No		
				O	82 ± 20	No	120 ± 30	
	Xe 100	12.7	90	Si + O	362 ± 75	No	362 ± 75	
Arnoldbik et al. [18]	Xe 200	14.2	90	Si	133 ± 25	No		
				O	284 ± 70	No	404 ± 100	
	Cu 50	8	25	O	200 ± 20	54 ± 12	80 ± 15	
	Chaumont et al. [19]	C ₄ 3	4.2	90	Si	15 ± 3	No	45 ± 9
		C ₈ 3.2	4.9	90	Si	225 ± 50	No	675 ± 150

3. Electronic sputtering experiments

Sputtering experiments with ions in the electronic energy loss regime were performed at the tandem accelerator in Munich using Ni, I, and Au ions. Equilibrium charge state of the ions was reached by inserting a $10 \mu\text{g cm}^{-2}$ thin carbon foil 10 cm in front of the sputter target. The flux of the beam was monitored via current measurements on the carbon foil, calibrated by a Faraday cup. As target we used a $510 \pm 25 \text{ nm}$ thick layer of vitreous SiO_2 thermally grown on a silicon wafer. Fig. 2a shows the a- SiO_2 sample fixed on a plate and the catcher arc mounted across the target. The inner side of the arc was covered with a thin high-purity Cu foil (99.9%) serving as catcher and later removed for analysis of the sputtered species. The set-up allowed us to measure angular distributions covering angles $80^\circ \leq \theta \leq -70^\circ$ ($\theta = 0^\circ$ is normal to the surface). In some experiments a small piece of Ge wafer as catcher was mounted at the top of the arc ($\theta = 0^\circ$). A scheme of the geometrical conditions is presented in Fig. 3. The diameter of the ion beam was 2 mm, the angle of beam incidence was $\alpha = 19^\circ$ with respect to the sample surface (Fig. 3a). Under this condition, the beam size on the sample is $\sim 2 \times 6 \text{ mm}^2$. The beam intensity was about 0.1 pA corresponding to a flux of $\sim 6 \times 10^9 \text{ ions/s/cm}^2$. The accumulation of a fluence of $10^{14} \text{ ions/cm}^2$ required 5 h of irradiation. The experimental conditions of the different irradiations are summarized in Table 2. More experimental details are presented in earlier papers [12,13,20]. Four irradiations were performed with Au ions in order to verify the reproducibility of the sputtering experiments. For two irradiations we used almost identical beam energies (190 and 197 MeV) and Cu foils as catchers (experiment 1 and 3 in Table 2). One set of experiments was devoted to measure the thickness decrease of the SiO_2 target using Elastic Recoil Detection Analysis (ERDA [26,27]) and simultaneously determine the number of Si atoms collected on the Cu catcher and the sticking coefficient of Si on Cu (experiment 2 and 3 in Table 2). In a third run, it was tested if the number of collected particles depends on the catcher

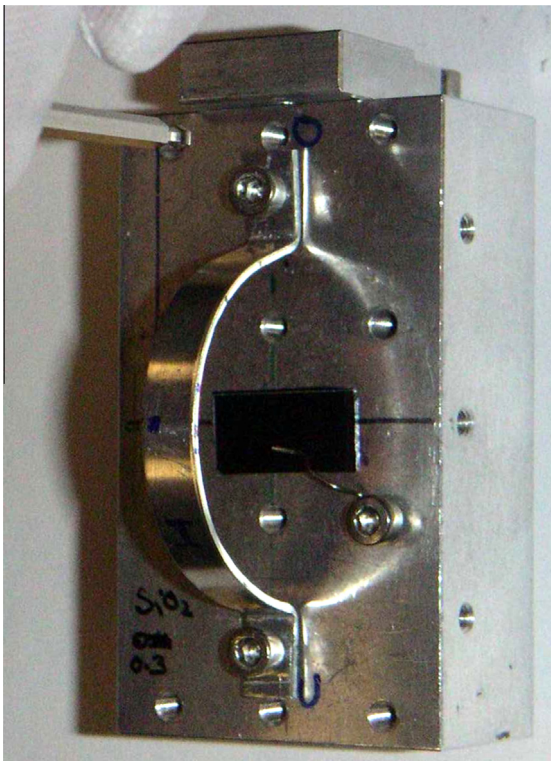


Fig. 2. Target holder with a- SiO_2 sample and arc-shaped catcher mounted across.

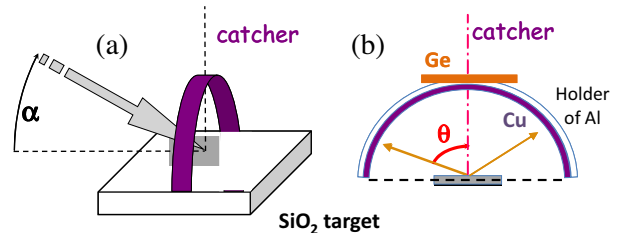


Fig. 3. (a) Scheme of target holder and beam incidence. (b) catcher geometry: thin Cu foil deposited on Al arc (experiments 1–3 in Table 2) or flat Ge crystal (experiments 4–6 in Table 2).

material. For this, flat catcher plates of Ge were mounted at $\theta = 0^\circ$ (experiment 4 in Table 2) and compared to the rate measured at $\theta = 0^\circ$ when using Cu catchers (experiment 1 and 3 in Table 2). Experiments with light ions (I and Ni) were performed in order to measure sputtering rates at lower S_e values and verify published sputtering results. These tests were performed by collecting Si on flat Ge catchers mounted at $\theta = 0^\circ$ (experiment 5 and 6 in Table 2).

4. Sputtering yield: Catcher analysis and target erosion

The number of particles sputtered from the a- SiO_2 target was determined by analyzing the Cu and Ge catchers by means of ERDA using 190 MeV Au ions under $\alpha = 19^\circ$ of beam incidence. In order to protect the atoms collected on the catcher from being sputtered off by the analyzing beam, the catchers were covered by a thin layer of pure copper. From a step by step analysis along the full length of the arc catcher, the differential sputter yields ($dY(\theta)/d\theta$) were correlated to the sputtering angle θ . The measured angular distribution of sputtered Si atoms is shown in Fig. 4a. Due to omnipresent oxygen, it was not possible to determine the amount of sputtered O atoms. The angular distributions of experiment 1 and 3 (Table 2) can be described by a fit using $dY(\theta)/d\theta = A (\cos\theta)^n$. Within experimental errors, we deduced a fit value of $n \sim 1$ indicating isotropic emission of the Si atoms. The total sputtering rate per incoming ion is obtained by integrating the angular distribution and assuming azimuthal emission symmetry yielding $Y_{\text{tot}} = \pi A$. The fit values of the intensity parameter A and Y_{tot} are reported in Table 2. Complementary to the catcher analysis, we also tested the erosion of the bombarded sample by measuring the amount of O and Si atoms/ cm^2 in the target by ERDA (experiment 2). Initially, the total number of target atoms (Si + O at/ cm^2) is equal to $3.5 \cdot 10^{18}$ at/ cm^2 corresponding to a target thickness of 540 nm. The decrease of O and Si atoms/ cm^2 versus the ion fluence is shown in Fig. 4b. The slopes give the number of emitted O and Si atoms per incident ion (Table 2). The ratio of the O to Si yield is 2, confirming stoichiometric sputtering as reported by Matsunami et al. [16,17]. Moreover, within the experimental errors, the number of emitted Si from the erosion experiment is in good agreement with the number of Si collected on the catcher (experiment 1 and 3) and verifies a sticking coefficient of 1 for Si atoms on Cu.

The sputtering yields at $\theta = 0^\circ$ resulting from the analysis of the Cu and Ge catcher (experiment 3 and 4) agree well within experimental errors confirming that the sputtering rate is independent of the catcher material. This also supports that the sticking coefficient of Si atoms on a Ge catcher is 1. Assuming an isotropic angular distribution of the emitted Si atoms as determined from experiments 1 and 3, the total sputtering yield is equal to πA (Table 2). For all experiments with Ge catchers (experiments 4 to 6 in Table 2), we can thus deduce the total yield directly from the differential yield measured at $\theta = 0^\circ$.

Table 2

Parameters and results for present sputtering experiments: (a) experiment number, (b) catcher material, (c) ion and energy of beams used for sputtering, (d) electronic energy loss deduced from the SRIM-2010 code [21], (e) fluence, (f) sputtered species, (g) intensity coefficient A of angular distribution, $(dY(\theta)/d\theta) = A \cos\theta$, (h) total yield $Y_{\text{tot}} = \pi \times A$ of sputtered Si or O atoms at angle of beam incidence $\alpha = 19^\circ$, (i) total yield of sputtered Si or O atoms corrected for $\alpha = 90^\circ$ using $Y_{\text{tot}}(90^\circ) = Y_{\text{tot}}(\alpha) \sin(\alpha)^{-1.65}$, (j) total yield of all sputtered atoms for $\alpha = 90^\circ$, either 3 times the Si yield (catcher analysis) or the sum of Si and O atoms (target erosion).

a	b	c		d	e	f	g	h	i	j
Experiment number	Catcher	Ion	Energy	S_e keV/nm	Fluence ions/cm ²	Sputtered species	A (±20%)	Y_{tot} at $\alpha = 19^\circ$ (±20%)	Corrected $Y_{\text{tot}}(\alpha = 90^\circ)$ (±30%)	Integrated $Y_{\text{tot}}(\alpha = 90^\circ)$ for Si + O (±30%)
			MeV							
1	Cu	Au	190	17.1	9×10^{13}	Si	910	2860	475	1425
2	erosion	Au	190	17.1	9×10^{13}	Si O		2660* 5310*	440 880	1320**
3	Cu	Au	197	17.4	1×10^{14}	Si	710	2230	370	1110
4	Ge	Au	210	17.7	1×10^{14}	Si	780	2450	410	1230
5	Ge	I	148	14.8		Si	335	1050	175	525
6	Ge	Ni	69	7.5	2×10^{14}	Si	90	280	45	135

* Extracted from target erosion data.

** Sum of Si and O atoms deduced from target erosion.

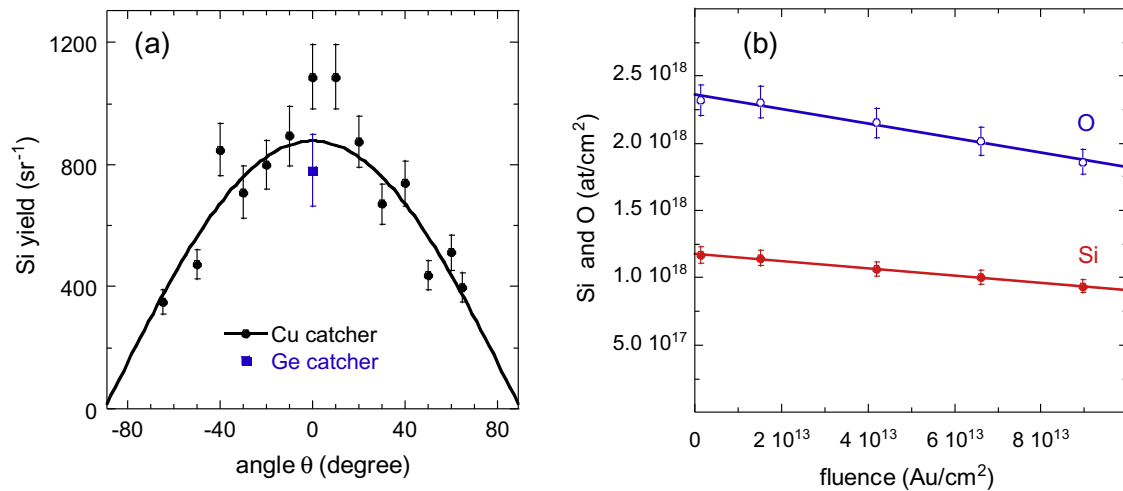


Fig. 4. (a) Angular distribution of Si atoms sputtered from a-SiO₂ target: differential sputter yield per incoming Au ion for Si atoms collected on a Cu catcher (black circles, experiment 1) and Si atoms collected at $\theta = 0^\circ$ on a Ge catcher (blue square, experiment 4); (b) erosion experiment: number of Si and O atoms of a-SiO₂ target as a function of fluence (190 MeV Au ions) (experiment 2). (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

Fig. 5 reports total sputtering yields deduced from our experiments together with previous results as a function of energy loss [14–19]. The data are in good agreement following a S_e power law with an exponent of about 3 (compare with Fig. 1). Furthermore, our new results show that the sputtering yield of a-SiO₂ is nearly 5 times larger than the yield of c-SiO₂ at an energy loss of 17.5 keV/nm. This confirms the higher sensitivity of amorphous silica compared to crystalline quartz as already seen in Fig. 1.

5. Tentative description with the inelastic thermal spike model

In order to perform quantitative calculations of sputtering yields, the inelastic thermal spike model, originally developed for tracks in bulk material, was modified by incorporating the rate of vaporization [20]. The projectile energy is first given to the target electrons and subsequently transferred to the lattice atoms via electron–electron and electron–phonon interaction. The two coupled differential equations governing the heat diffusion in the electron and atom subsystems are solved numerically in cylindrical geometry. The thermodynamical parameters of the electron and atom subsystems were defined previously [8]. The initial condition of the calculations is 300 K equal to the temperature of the sample during the irradiation. At this temperature, the internal energy is

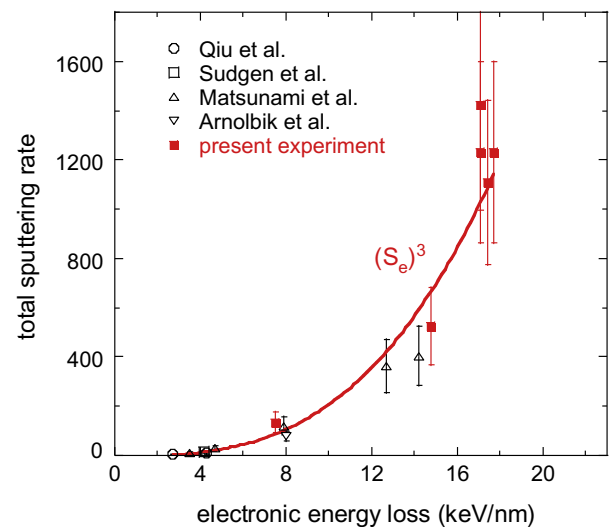


Fig. 5. Total sputtering rate as a function of energy loss of the bombarding ions, including data of amorphous SiO₂ by Qiu et al. [14], Sudgen et al. [15], Matsunami et al. [16,17], Arnolbik et al. [18] (open black symbols), and results of present experiment (red squares). (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

0.03 eV/at, as deduced from the integration of the lattice specific heat from 0 to 300 K. For the model calculation, typically a cylinder radius of ~ 200 nm is considered which is sufficiently large to avoid size effects. The initial energy on the electrons corresponds to the electronic energy loss S_e and its radial distribution follows approximately a $(1/r)^2$ function [28]. This radial energy deposition on the electrons is defined by a mean cylinder radius, r_e , in which 66% of S_e is radially deposited. With increasing specific energy of the ion beam r_e becomes larger. Our model calculations were performed for 0.2 and 5 MeV/u ions, where r_e is 1.5 and 6 nm, respectively [29]. The only free parameter of the calculation is the coupling constant between the electron and atom subsystems, defined as the electron–phonon mean free path λ [30,31]. λ characterizes the radial expansion of the initial energy before its transfer to the atoms. It is linked to the electron–phonon coupling g by the relation $\lambda^2 = D_e C_e / g$, where D_e and C_e , the electronic thermal diffusivity and the electronic specific heat respectively, are constant as defined in [29,30]. The cylinder radius in which the energy is deposited to the atoms is a quadratic convolution of r_e and λ , i.e., equal to the square root of the sum of r_e^2 and λ^2 .

For inorganic insulators the value of the electron–phonon mean free path λ ranges between 2.5 nm [7] and 5 nm [30] corresponding to an electron–phonon mean free time between 3×10^{-14} and 10^{-13} s. For a temperature spike of 1000 K this corresponds to a rapid heating rate of the lattice atoms of about 10^{16} K s $^{-1}$. At such a heating rate the melting temperature (T_m) measured at equilibrium is not an adequate material parameter. Rethfeld et al. [32] calculated that the nucleation of a molten phase requires a temperature that is by a factor about 1.3 larger than T_m , if the heating rate is in the order of 10^{15} K s $^{-1}$. Experimentally this phenomenon was observed in fs-laser experiments irradiating GaAs. Melting in this short time window requires much higher temperatures than the equilibrium melting temperature. This is not the case when a ps laser is used for which the increase in temperature stops at T_m [33]. Motivated by these results, our i-TS calculations were performed within a superheating scenario [20] assuming that the temperature increase does not stop at the melting and vaporization temperature. It is assumed that ion tracks form during a rapid quench of a melt phase created along the ion path. The energy E_m to melt amorphous silicon is the sum of the energy to reach the melting temperature from 0 K plus the latent heat of fusion. For amorphous materials, E_m is estimated to be 15–20% less than the same material in its crystalline phase [34,35]. For crystalline SiO $_2$, E_m is equal to 0.5 eV/at. In our calculations we thus use $E_m = 0.43$ eV/at for amorphous SiO $_2$. Based on this value, a superheating melting temperature $T_{sm} = 2100$ K [5] is determined using

$$E_m = 2.3 \times 10^{-3} \times \int_0^{T_{sm}} C_a(T) dT$$

where $C_a(T)$ is the temperature dependent specific heat of the atomic lattice in J g $^{-1}$ K $^{-1}$.

Fig. 6a shows an example of the evolution of the lattice temperature $T_a(t, r)$ around the projectile trajectory as a function of time (t) and space (r) for ions of 1 MeV/u energy, $S_e = 15$ keV/nm, and $\lambda = 2.5$ nm. Since temperature is not a good parameter on such short time scales, we converted the temperature into the corresponding energy per atom $E_a(r, t)$ (Fig. 6) using the following relation

$$E_a(r, t) = 2.3 \times 10^{-3} \times \int_0^{T_a(r, t)} C_a(T) dT$$

Applying the melting criteria (horizontal line in Fig. 6a), a track size of 5.5 nm is deduced in excellent agreement with experimental results [5].

For a-SiO $_2$, two λ values, 2.5 nm [7] and 3 nm [8] nm, were determined by fitting the track radii in an energy regime around 5 MeV/u. Taking the advantage of new track size measurements at low velocity (~ 0.2 MeV/u, $r_e = 1.5$ nm) [10], new fit of track radii were performed and $\lambda = 2.5$ nm seems to be a better value for the electron phonon mean free path than 3 nm for all track radii resulting from an irradiation with a beam energy of 0.2 MeV/u (Fig. 7a). The calculated change of the track size (Fig. 7a) for a beam energy of 5 MeV/u is negligible due to the large value of r_e (6 nm) as compared to λ . So $\lambda = 2.5$ nm will be used to calculate the sputtering rate in a-SiO $_2$.

In contrast to track formation being related to melting, the criterion for sputtering of surface atoms is the sublimation energy. For a-SiO $_2$, the required energy is thus the energy to reach the melt phase (0.43 eV/at), plus the energy to reach the boiling temperature $T_b = 3223$ K (equal to $C_a(T_b - T_m)$, with $C_a = \sim 1.3$ J g $^{-1}$ K $^{-1}$ [36] being the specific heat of a-SiO $_2$), plus the latent heat of vaporization equal to 4715 J g $^{-1}$. The calculated sublimation energy is equal to 1.83 eV/at slightly smaller than the 1.9 eV/at for c-SiO $_2$. Once the energy $T_a(t, r)$ in the atomic system is known, the total sputtering yield Y_{tot} is determined by integrating the evaporation rate $\Phi(T_a(t, r))$ over time and space. The temperature dependence of Φ is given in Refs. [13,20]:

$$\Phi(T_a(r, t)) = N \sqrt{\frac{k_b T(r, t)}{2\pi M}} \exp\left(\frac{-U}{k_b T(r, t)}\right) \quad (1)$$

where k_b is the Boltzmann constant and N denotes the atomic density and M the molecular mass of the target. The surface binding

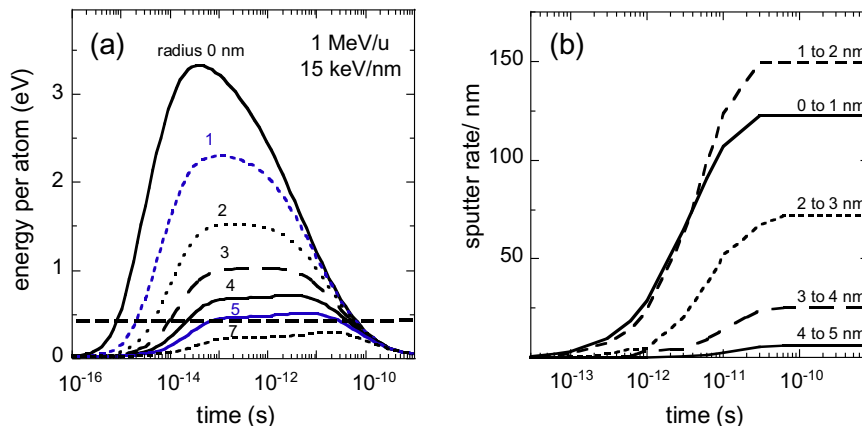


Fig. 6. i-TS calculations for beam energy of 1 MeV/u, $S_e = 15$ keV/nm, and $\lambda = 2.5$ nm: (a) energy per atoms for different track radii versus time; the horizontal line corresponds to the melting temperature/energy; (b) sputter rate per radial space of 1 nm versus time.

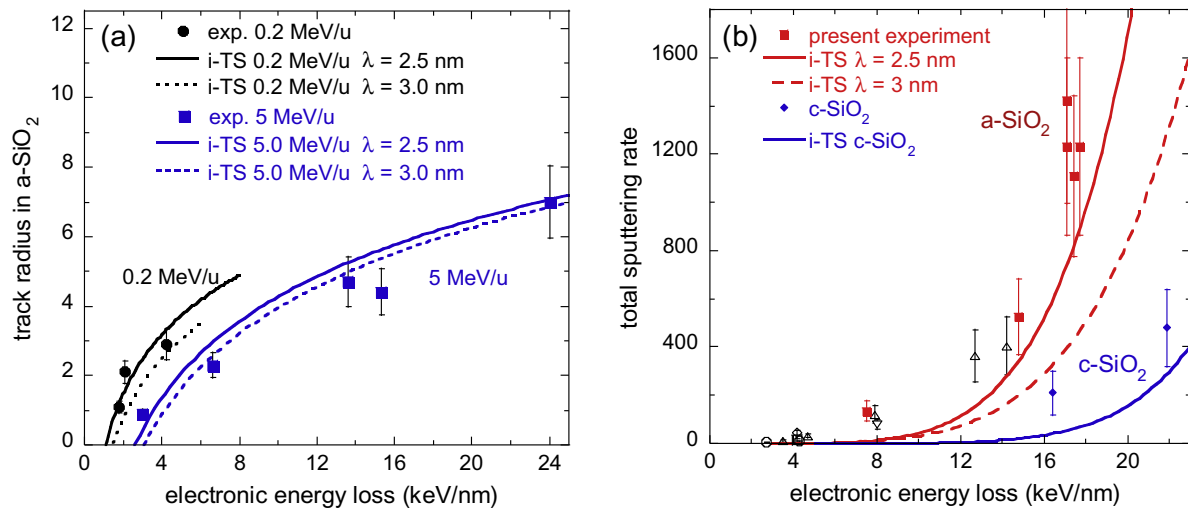


Fig. 7. Track radii and sputtering yields as a function of energy loss for published data (black points) [14–19] and results from this work: (a) track radii in a-SiO₂ from irradiations at 0.2 MeV/u [10] and 5 MeV/u [8]. Full lines correspond to i-TS model calculations using $\lambda = 2.5$ nm (solid lines) and $\lambda = 3$ nm (dotted lines). (b) Total sputtering rates for a-SiO₂ (black and red data symbols) and for c-SiO₂ (blue diamonds). The lines are calculated sputtering rates for a-SiO₂ (red, solid $\lambda = 2.5$ nm, dashed $\lambda = 3$ nm) and for c-SiO₂ (blue, $\lambda = 3.8$ nm). (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

energy U is set equal to the vaporization energy. The sputtering rate is very sensitive to the time during which the deposited energy is dissipated. The cooling is determined by the thermal conductivity K_a of the atoms. For temperatures from 300 K to the boiling temperature, the thermal conductivity of a-SiO₂ is assumed to be constant and equal to $K_a = 0.01 \text{ J s}^{-1} \text{ g}^{-1} \text{ K}^{-1}$ till the boiling temperature. Above the boiling temperature, K_a was estimated using the description made by Sigmund and Claussen [37] for the elastic collision spike. For c-SiO₂, the thermal conductivity was defined by Meftah et al. [24], varying like $14/T^{0.9}$ from room temperature till the super heating temperature of melting equal to 2150 K when it reaches a value of $0.01 \text{ J s}^{-1} \text{ g}^{-1} \text{ K}^{-1}$. For larger temperatures K_a was estimated as for a-SiO₂. The total sputtering yield is obtained by numerically integrating the temperature dependent evaporation rate over time and space. Fig. 6c reports an example of the time evolution of the sputtering yield for 1-nm wide radial intervals. The calculated total yield as a function of energy loss is presented in Fig. 7b together with experimental data. The sputtering yield calculations are rather sensitive to the electron–phonon mean free path λ . Yields calculated using $\lambda = 3$ nm are nearly by a factor of two smaller than calculations with $\lambda = 2.5$ nm (Fig. 7b). Overall, the calculated sputtering yields are smaller than the experimental data for a-SiO₂ as well as for c-SiO₂ (Fig. 7b and Ref. [10]). The underestimation of the sputtering yield in both materials may be due to overestimated thermal conductivities at high temperatures (lower thermal conductivity leads to an increase of the sputtering yield). However, our i-TS model calculations nicely reproduce the large difference in sputtering yields between crystalline and amorphous silica.

6. Conclusions

The catcher technique was applied to measure angular distributions and total yields of electronic sputtering of amorphous SiO₂. Sputtering with swift heavy ions leads to large sputtering yields up to 10^3 atoms and more per incoming projectile. Measurements with Cu and Ge as catcher material provide the same yields. The sticking coefficient is close to unity and the sputtering process follows the stoichiometry of the target. Our experiments using heavy ions (Ni, I, and Au ions of electronic energy loss between 7 and 18 keV/nm) are in good agreement with earlier sputtering measurements with light ions (C up to Xe ions of electronic energy loss

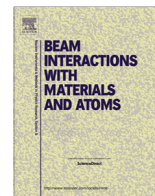
between 3 and 15 keV/nm). The angular distribution of the sputtered particles is isotropic with the differential sputtering yield $dY(\theta)/d\theta \sim \cos\theta$. The total sputtering yield increases with electronic energy loss following a power law of $Y_{\text{tot}} \sim (S_e)^3$. The sputtering rate of amorphous SiO₂ is almost 5 times larger than for crystalline SiO₂ confirming that the amorphous phase is more sensitive than the crystalline phase. This effect is related to stronger electron–phonon coupling in amorphous materials [38] resulting in higher spike temperatures and consequently larger sputtering rates than in crystalline materials.

Calculations based on the inelastic thermal spike provide a good description of the evolution of the sputtering rate as a function of the energy loss of the ions. For the electron–phonon mean free path the calculations used the respective λ values that were deduced by fitting the size of tracks in a-SiO₂ and c-SiO₂. However for both materials, the absolute value of the calculated sputtering rate is smaller compared to the experiments. The reason for this underestimation is probably due to an incorrect thermal conductivity of the lattice atoms which is not known at high temperatures.

References

- [1] W.J. Weber, R.C. Ewing, C.R.A. Catlow, T.D. de la Rubia, L.W. Hobbs, C. Kinoshita, H. Matzke, A.T. Motta, M. Nastasi, E.K.H. Salje, E.R. Vance, S.J. Zinkle, *J. Mater. Res.* 13 (1998) 1434.
- [2] G. Battaglin, G.W. Arnold, G. Mattei, P. Mazzoldi, J.C. Dran, *J. Appl. Phys.* 85 (1999) 8040.
- [3] R.A.B. Devine, *Nucl. Instr. Meth. B* 91 (1994) 1.
- [4] L. Martin-Samos, Y. Limoge, J.P. Crocombette, G. Roma, N. Richard, E. Anglada, E. Artacho, *Phys. Rev. B* 71 (2005) 014116.
- [5] P. Kluth, C.S. Schnorr, O.H. Pakarinen, F. Djurabekova, D.J. Sprouster, R. Giulian, M.C. Ridgway, A.P. Byrne, C. Trautmann, D.J. Cookson, K. Nordlund, M. Toulemonde, *Phys. Rev. Lett.* 101 (2008) 175503.
- [6] A. Benyagoub, S. Löffler, M. Rammensee, S. Klaumünzer, G. Saemann-Ischenko, *Nucl. Instr. Meth. B* 65 (1992) 228.
- [7] M.C. Busch, A. Slaoui, P. Siffert, E. Dooryhee, M. Toulemonde, *J. Appl. Phys.* 71 (1992) 2596.
- [8] C. Rotaru, F. Pawlak, N. Khalfaoui, C. Dufour, J. Périère, A. Laurent, J.P. Stoquert, H. Lebius, M. Toulemonde, *Nucl. Instr. Meth. B* 272 (2012) 9.
- [9] K. Awazu, S. Ishii, K. Shima, S. Roorda, J.L. Brebner, *Phys. Rev. B* 62 (2000) 3689.
- [10] M. Toulemonde, W.J. Weber, G.S. Li, V. Shutthanandan, P. Kluth, T.F. Yang, Y.G. Wang, Y. Zhang, *Phys. Rev. B* 83 (2011) 054106.
- [11] A. Benyagoub, M. Toulemonde, *J. Mater. Res.* 30 (2015) 1529.
- [12] W. Assmann, M. Toulemonde, C. Trautmann, *Topics Appl. Phys.* 110 (2007) 401.

- [13] M. Toulemonde, W. Assmann, C. Trautmann, F. Grüner, H.D. Mieskes, H. Kucal, Z.G. Wang, Nucl. Instr. Meth. B 212 (2003) 346.
- [14] Yuanxun Qiu, J.E. Griffith, Wen Jin Meng, T.A. Tombrello, Rad. Eff. 70 (1983) 231.
- [15] S. Sugden, C.J. Sofield, M.P. Murrell, Nucl. Instr. Meth. B 67 (1992) 569.
- [16] M. Matsunami, N. Sataka, A. Iwase, Nucl. Instr. Meth. B 193 (2002) 830.
- [17] M. Matsunami, N. Sataka, A. Iwase, S. Okayasu, Nucl. Instr. Meth. B209 (2003) 288.
- [18] W.M. Arnoldbik, T. Tomazeiu, F.H.P.M. Habraken, Nucl. Instr. Meth. B 203 (2003) 151.
- [19] J. Chaumont, H. Bernas, A. Kusnetsov, C. Clerc, L. Dumoulin, Nucl. Instr. Meth. B 129 (1887) 436.
- [20] M. Toulemonde, W. Assmann, C. Trautmann, F. Grüner, Phys. Rev. Lett. 88 (2002) 057602.
- [21] J.F. Ziegler, M.D. Ziegler, J.P. Biersack, Nucl. Instr. Meth. B 268 (2010) 1818.
- [22] A. Audouard, J. Dural, M. Toulemonde, A. Lovas, G. Szenes, L. Thomé, Phys. Rev. 54 (1996) 15690.
- [23] A. Dunlop, D. Lesueur, P. Legrand, H. Dammak, J. Dural, Nucl. Instr. Meth. B 90 (1994) 330.
- [24] A. Meftah, F. Brisard, J.M. Costantini, E. Dooryhee, M. Hage-Ali, M. Hervieu, J.P. Stoquert, F. Studer, M. Toulemonde, Phys. Rev. B 49 (1994) 12457.
- [25] M. Toulemonde, J.M. Costantini, C. Dufour, A. Meftah, E. Paumier, F. Studer, Nucl. Instr. Meth. B 116 (1996) 37.
- [26] W. Assmann, P. Hartung, H. Huber, P. Staat, H. Steffens, Ch. Steinhausen, Nucl. Instr. Meth. B 85 (1994) 726.
- [27] W. Assmann, H. Huber, Ch. Steinhausen, M. Dobler, H. Glücker, A. Weidinger, Nucl. Instr. Meth. B 89 (1994) 131.
- [28] M.P.R. Waligorski, R.N. Hawn, R. Katz, Nucl. Track Rad. Meas. 11 (1986) 309.
- [29] M. Toulemonde, W. Assmann, C. Dufour, A. Meftah, F. Studer, C. Trautmann, Mat. Fys. Medd. 52 (2006) 263.
- [30] M. Toulemonde, Ch. Dufour, A. Meftah, E. Paumier, Nucl. Instr. Meth. B 166–167 (2000) 903.
- [31] A. Meftah, M. Djebara, N. Khalfaoui, M. Toulemonde, Nucl. Instr. Meth. B 146 (1998) 431.
- [32] B. Rethfeld, K. Sokolowski-Tinten, D. von der Linde, S.I. Anisimov, Phys. Rev. B 65 (2002) 092103.
- [33] P. Hermes, B. Danielzik, N. Fabricius, D. von der Linde, J. Luhl, Y. Heppner, B. Stritzker, A. Pospieszczyk, Appl. Phys. A 39 (1986) 9.
- [34] M.D. Rodríguez, B. Afra, C. Trautmann, M. Toulemonde, T. Bierschenk, J. Leslie, R. Giuliani, N. Kirby, P. Kluth, J. non Cryst. Sol. 358 (2012) 571.
- [35] T. Kitayama, Y. Morita, K. Nakajima, K. Narumi, Y. Saitoh, M. Matsuda, M. Sataka, M. Tsujimoto, S. Isoda, M. Toulemonde, K. Kimura, Nucl. Instr. Meth. B 356–357 (2015) 22.
- [36] <<http://webbook.nist.gov>>.
- [37] P. Sigmund, C. Claussen, J. Appl. Phys. 52 (1981) 990.
- [38] S. Klaumünzer, Nucl. Instr. Meth. B 225 (2004) 136.



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Laser drilling of concrete using long pulse Nd:YAG laser for dismantling applications

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Abstract:

Dismantling and decommissioning of a nuclear facility often involves cutting and drilling of thick concrete structures. Long pulse Nd:YAG lasers with high peak powers have the unique ability to drill through concrete. In this paper, we have investigated laser drilling of concrete using an optical fiber-coupled pulsed Nd:YAG laser providing 1 kW average power and 20 kW peak power. High-density concrete cuboids like Hematite and natural stones were used to study the effect of laser pulse duration and repetition rate on drilling of concrete. We have drilled holes of up to 3 mm diameter and up to 75 mm depth in Hematite reinforced concrete and natural stones occurring in earth crust. A laser-drilling nozzle with coaxial gas jet was developed for concrete drilling. We have found that this laser technique is highly localized, environmental friendly, well controlled as well as time saving as compared to other conventional drilling methods.

Introduction:

Laser cutting and drilling has been reported as a well-established and very specific technique for dismantling and decommissioning work in nuclear facilities. It involves melting and evaporation of the material. High power lasers were found highly effective in drilling and cutting of rocks, stones, and high density concrete¹⁻⁵. Crouse et al.¹, have demonstrated 500 mm thick concrete cutting by multi-pass technique with 1 kW CO₂ laser. Yoshizawa et al.² have reported the deepest cutting through reinforced concrete up to 180 mm, using a 15 kW CO₂ laser at cutting speed of 25 mm/s. Rao et al.³, have performed concrete scabbling up to 150 mm thickness with 5 kW CO₂ laser. Muto et al.⁴ have demonstrated slab concrete cutting of 100 mm thickness with a 4 kW fiber laser at 1070 nm. Drilling in hard concrete by any conventional mechanical method is difficult and requires a lot of resources even for small penetration depths. Lenk et al.⁵ have cut up to 70 mm depth with 3 kW CW Nd:YAG laser. In all these reports, either they have performed laser scabbling or used a multi-pass technique with vacuum suction due to formation of viscous dross to cut up to 500 mm thick concrete. Laser beam with a suction mechanism for the efficient removal of material always interacts with a newly cleaned surface during the process. During the drilling of holes in concrete, pulsed lasers have advantage over CW lasers due to its high peak powers and small pulse durations along with its lower cost. With pulsed lasers, energy is deposited in the material for a short duration of the order of a few milliseconds and within this short duration, heat diffusion is limited. Moreover, with pulsed lasers, the laser process parameters such as pulse duration, repetition rate, and pulse energy can be controlled to drill holes of required depth precisely. In this paper, we have performed laser drilling in Hematite reinforced concrete and natural stones up to 75 mm depth using compressed gas as an assist gas with no vacuum suction system by a in-house developed 1 kW average power fiber coupled pulsed Nd:YAG laser .

Experimental Details:

Laser drilling experiments have been performed on Hematite concrete samples (rock mixed, density 2300 kg/m³) and stone samples (aluminium oxide mixed, density 2360 kg/m³). A home-built flash-lamp pumped pulsed Nd:YAG laser of 1kW average power and 20kW peak power has been used for drilling holes in the samples. Laser beam was delivered through a 30 m long, 600 μm core diameter, and 0.22 numerical aperture step index silica-silica optical fiber. As the laser output from the optical fiber is diverging with the numerical aperture of 0.22, a laser nozzle with coaxial gas flow arrangement was attached at the output end of the optical fiber to focus the laser beam. Two laser nozzles have been used to drill holes of different diameters and depths. One laser nozzle consists of a collimating lens of 75 mm focal length and a focusing lens of 200 mm focal length, which provides focusing spot diameter of 1.6 mm at the laser nozzle tip. The other laser nozzle consists of a collimating lens of 75 mm focal length and a focusing lens of 300 mm focal length, which provides focusing spot diameter of 2.4 mm at the laser nozzle tip. Stand-off distance between laser nozzles and the samples was kept constant equal to 3 mm, which provides the space for removal of burnt particles and debris to come out. During the laser beam and material interaction, particles and debris were ejected out at a high velocity away from the concrete surface towards the processing optics. These particles may damage the lenses used in the drilling nozzle. To remove debris, compressed air at 10 kg/cm² of pressure was used. Experiments were performed to observe the effect of pulse duration, repetition rates and flash lamp current on concrete drilling. A schematic view of the experimental set-up for concrete drilling is as shown in Fig.1.

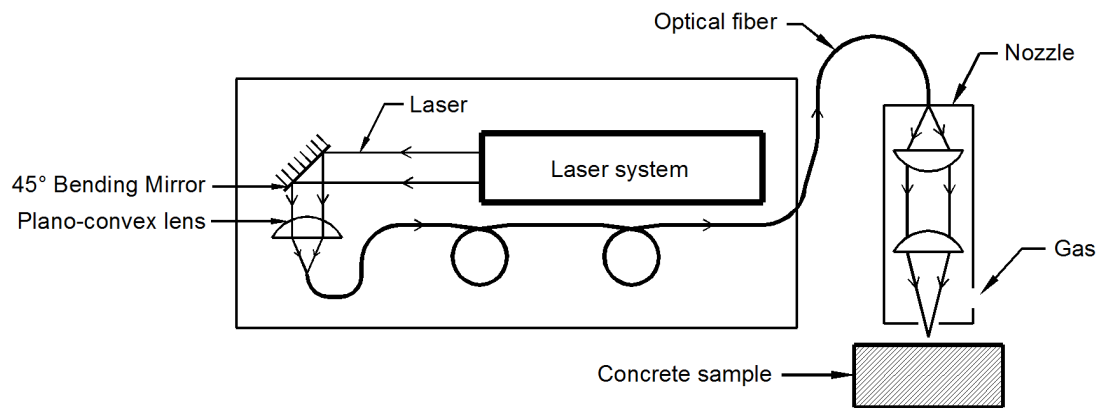


Fig. 1. A schematic view of experimental set up for laser drilling of concrete and stones.

At the exit fiber end, the diameter of the focused spot (S) can be calculated using fiber core diameter D_{core} and the ratio of the focal length of the two lenses, which is known as imaging ratio and is given as

$$S = (f_2 / f_1) \cdot D_{core} \tag{1}$$

where, f_1 is the focal length of collimating lens and f_2 is the focal length of the focusing lens. The depth of focus for the laser beam exit from the fiber end and imaged by a dual lens imaging system with imaging ratio of (f_2/f_1) can be written as

$$D.O.F. = \pm (f_2 / f_1)^2 \cdot (D_{core} / NA) \tag{2}$$

here, NA is the numerical aperture of the fiber having a value of 0.22. It is clear from Eq. (2) that for drilling in thick concrete, a large depth of focus and subsequently a high imaging ratio of the lenses are required.

Results and discussion:

A view of pulsed Nd:YAG laser drilling experiment with laser nozzle having 1:4 imaging ratio is as shown in Fig. 2. Drilling of holes up to 75 mm deep and 3mm in diameter in Hematite reinforced concrete and natural stones samples were carried out using 1 kW average power and 20 kW peak power pulsed Nd:YAG laser with 600 μm core diameter fiber optic beam delivery. Drilling of holes in Hematite and natural stones with pulsed laser did not require any vacuum suction system. Thus, without any mechanical cleaning requirement, these holes were drilled in these concrete samples. For drilling of holes of 40 mm deep with 2 mm diameter in Hematite concrete and natural stones samples, we have used laser nozzle having imaging ratio of 1: 2.7 and optimized laser parameters were pulse duration of 2 ms, repetition rate of 20 Hz and pulse current of 240 Amp. Drilling operation took 1.5 minutes to drill 40 mm deep holes in Hematite and natural stones. For drilling of holes of 75 mm deep with 3 mm diameter in Hematite concrete and natural stones samples, we have used laser nozzle having imaging ratio of 1: 4 and optimized laser parameters were pulse duration of 3 ms, repetition rate of 15 Hz and current of 240 Amp. In this case, drilling operation took 4 minutes to drill 75 mm deep holes in Hematite and natural stones. Further, increase in pulse duration and time could not increase the depth of drilling in these concretes due to diffusion of heat in concrete samples. This may be due limited depth of focus and ineffective removal of material from large depths. Table-1 shows values of laser parameters and drilling parameters of Hematite and natural stone samples.

Table-1: Laser and drilled hole parameters.

<u>Sr. No.</u>	<u>Parameter</u>	<u>Value</u>
1.	Pulse duration	2-6 ms
2.	Current	200-300 Amp
3.	Rep. rate	9-26 Hz
4.	Depth	40-75 mm
5.	Hole diameter	2 mm, 3 mm
6.	Imaging ratio	1: 2.7, 1: 4
7.	Time taken to drill	1.5-4 min.



Fig. 2. A view of laser drilling of Hematite reinforced concrete.

Figure 3(a), (b) & (c) show a view of laser drilled holes in Hematite reinforced concrete and natural stone samples. In Hematite reinforced concrete, one can see the change in diameters along depth. At the front, middle and end of the hole, the measured hole diameters are about 3 mm, 2 mm and 3.8 mm, respectively. Depth and diameter of drilled holes at a particular set of parameters were found to be similar in both the concrete samples. Further efforts to increase depth of drilling by means of increase in depth of focus and assist gas pressure along with study of effect of different gases in drilling process is under progress.

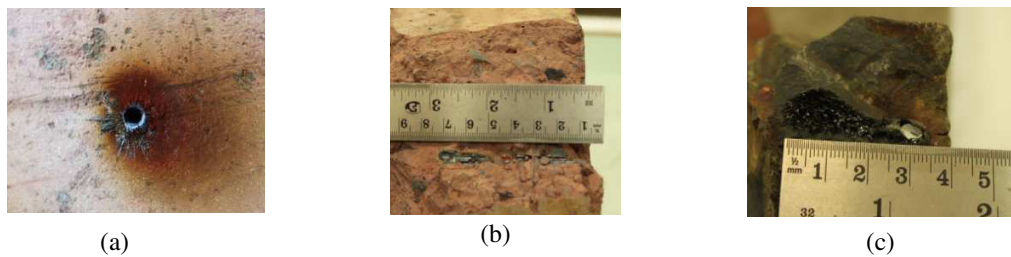


Fig. 3. (a) Front view of 75 mm drilled hole in Hematite concrete, (b) Side view of 75 mm drilled hole in Hematite concrete, (c) Side view of 40 mm drilled hole in natural stone.

Conclusion:

In conclusion, we have carried out laser drilling in Hematite reinforced concrete and natural stones up to 75 mm deep using a fiber coupled 1 kW average power pulsed Nd:YAG laser with laser nozzle having 1:4 imaging ratio. Effect of laser pulse duration and repetition rate on concrete drilling using were also studied. Experimental results showed that fiber coupled pulsed Nd:YAG laser can be used as a potential replacement for conventional drilling tools as it does not require any vacuum suction system or any mechanical cleaning. Further studies are in progress to achieve further depth of drilling. This method of concrete drilling will be useful in dismantling work of nuclear facilities as well as for civil and architecture works.

References:

1. P.L. Crouse et al, ICALEO 2003, Jacksonville, October (2003)
2. H Yoshizawa et al, *Transactions of the Japan Welding Society*, **20** (1), pp 31-36 (1989)
3. B. T. Rao et al, *Optics & Laser Technology*, Vol. 37, pp. 348-356,2005
4. S. Muto et al, *Chin. Opt. Lett.* **5**, S39-S41 (2007)
5. A. Lenk et al, *High-Power Lasers in Civil Engineering and Architecture, Proc. SPIE 3887* ,45, pp 205-210 , (2000).

Ultra high vacuum compatible laser welding of SMA feedthrough and button electrode with beam position indicator for accelerator applications

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Abstract:

For the performance enhancement of beam monitoring system of Indus-2, upgraded beam position indicators (BPI) are required, which are non-destructive components for measurement of beam position in Indus-2 accelerator. For this purpose, a study on ultra high vacuum compatible laser welding of button electrodes in upgraded beam position indicator (BPI) was carried out. An in-house developed 250W average power fiber-coupled Nd:YAG laser has been utilized for successful vacuum grade leak tight laser welding of SMA feedthroughs with vacuum chamber of BPIs. Laser pulse energy, pulse duration, peak power density, inert gas purging, and spot overlap was optimized to achieve good quality leak tight welding.

Introduction:

Beam position indicators (BPI) are non-destructive components for measurement of beam position in Indus-2 accelerator. For the performance enhancement of beam monitoring system of Indus-2, it is required to upgrade BPIs. There are four number of electrode subassemblies in each of the upgraded BPI. Initially, laser welded joints were destructively tested for strength and leak tightness before final welding on prototype BPIs. Laser welding was carried out at two locations in each of the electrode subassembly as given below:

Location (1): Welding of button electrode (SS316L) at the end of central conductor (SS330) of SMA feedthrough.

Location (2): Welding of SMA feedthrough body (SS316L) on the vacuum chamber (SS316L) of upgraded BPI.

As it was difficult to use conventional welding techniques such as tungsten inert gas (TIG) welding for this particular development of upgraded BPIs due to inaccessibility of TIG welding at location (1) and possible failure of brazing joints inside the SMA feedthrough due to larger heat affected zone and higher temperature at location (2), laser welding was selected as an option. Conventional welding methods (plasma, arc welding, gas welding and MIG-TIG) lead to large heat affected zone and distortions. Advantages of Nd:YAG laser welding include flexible beam delivery through optical fiber, low heat affected zone (HAZ), low thermal distortions, no need of filler material, and non-contact nature. Laser welding is normally performed in argon atmosphere to minimize oxidation of the weld pool. As laser energy can be concentrated in a small area and laser pulse has a short duration, there is minimum heat-affected zone (HAZ) surrounding the weld bead. Although there are a few reports on pulsed Nd:YAG laser welding of SS304 material^{1,2}, however, there is hardly any report on laser welding of SS316L. Welding of SS316L is susceptible to crack formation due to sudden cooling at the end of pulse, so a careful control

on heating and cooling cycle along with gas purging flow rate is required to avoid crack in weld bead and hence to achieve vacuum grade leak tight laser welding. In this paper, we have optimized welding parameters and analyzed the welded samples to achieve vacuum compatible leak tight weld joints with narrow HAZ and smooth weld bead.

Experimental details:

An in-house developed fiber coupled Nd:YAG laser providing 250 W of maximum average power has been utilized in the experiments. Laser pulse duration can be varied in the range of 2-20 ms and pulse frequency in the range of 1-100 Hz. Output pulse shape has a rectangular profile and laser beam was delivered through a 400 μm core diameter and 0.22 numerical aperture (NA) optical fiber. SMA feedthrough and flange had a lip of 400 μm each, so the laser beam was focused using 1:1.5 imaging optics to have a focus spot diameter of 600 μm , so that it joins the lip of both the pieces and does not affect the body of SMA feedthrough and flange. It has a diameter of 16 mm. The focusing nozzle has a coaxial gas jet of argon with a constant flow rate of ~ 3 lpm to protect the weld bead from oxidation and also to protect focusing lens from the weld plume as well as from possible spatter through the weld zone. In order to qualify Nd:YAG laser welding at location (1) i.e., welding of the button electrode (SS316L) at the end of central conductor (SS330) of SMA feedthrough and at location (2) i.e., welding of SMA feedthrough body (SS316L) with the vacuum chamber (SS316L) of upgraded BPI before final laser welding of upgraded BPIs, few samples of electrode subassembly have been tested. Button electrode had a thickness of 6 mm. Access to welding location was only through a small hole of about 2 mm diameter and at a depth of about 5 mm. Welding of button electrode at the end of central conductor of SMA feedthrough was carried out by focusing the laser beam at the weld location and position the beam precisely at the weld location. It was spot welded by two successive laser pulses of 20 J pulse energy and 10 ms pulse duration with sufficient argon gas purging to avoid oxidation of weld joint. A few samples of electrode subassembly were welded as shown in fig. 1. Fig. 2 shows broken samples by universal testing machine UTM. During the test of laser welded joints of central conductor at location (1), load at the yield point was found to be 150 N, which is better than the calculated ideal minimum load of 133 N. After testing of strength of weld joint with UTM, all the electrodes of SMA feedthrough were welded with argon purging before its welding at location (2).

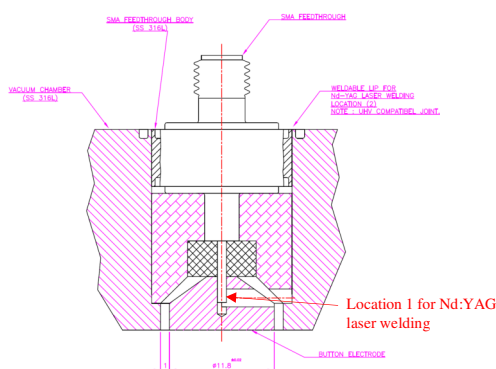


Fig. 1: A schematic of SMA feedthrough along with laser welding locations '1' and '2'.



Fig. 2: Laser welded samples of location (1) broken by UTM.

Experimental setup for laser welding is shown in Fig. 3. Focusing nozzle was mounted on a CNC table, which allows proper positioning of laser beam focus on the butt joint of two pieces. SMA feedthrough was mounted on a motorized rotary chuck and its speed of rotation was controlled by a stepper motor driver. It was found that spot overlapping, pulse energy, position of beam incidence, and gas flow rate along with pulse duration are critical parameters to achieve good quality weld with minimum HAZ. Initially, pulse energy and pulse duration were optimized to have a weld depth of 0.5 mm without ablation on the surface. Further, speed of rotation and pulse frequency were also optimized with pulse overlapping of 80% to have a smooth weld bead.

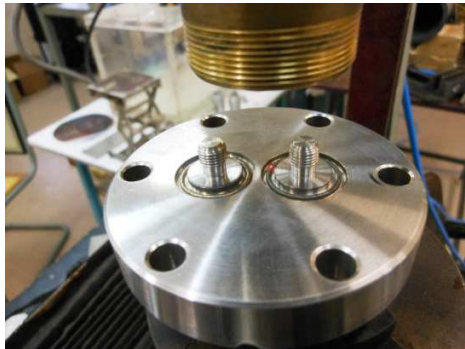


Fig. 3: Nd:YAG laser welding of sample SMA feedthrough for optimization of laser parameters.



Fig.4:Etched sample of laser weld joint.

Further, lip joint welding of SMA feedthrough with SS flange was carried out by first tagging at three points on the circumference at $\sim 120^\circ$ apart with a pulse energy of 12 J at 10 ms pulse duration and then welding continuous along the circumference was carried out over the lip. After welding, helium leak test of the sample SMA feedthrough was carried out with optimized Nd:YAG laser parameters as shown in fig.3 and found satisfactory with a helium leak rate of less than 2×10^{-10} mbar.litre/s at ambient temperature. Depth of penetration of laser welded joint was found to be ~ 0.5 mm, when it was cut by EDM wire. Depth of penetration was measured by polishing and etching the cut sample as shown in fig.4. Fig. 5(a) and (b) show the laser welded samples with single and double SMA feedthroughs on one flange. About 80% of the samples were found to have leak tightness of $\sim 2 \times 10^{-10}$ mbar.litre/s. Few samples were leaked due to offset of laser beam on lip centre of the weld.



(a)



(b)

Fig. 5: (a) Nd:YAG laser welded sample of single SMA feedthrough, and (b) double SMA feedthroughs on one flange with optimized laser parameters.

Results and discussion: Optimized laser parameters for good quality leak tight welding were pulse energy of 12 J with 10 ms of pulse duration and 2 Hz of repetition rate. The welded samples were tested using helium leak detector to ensure leak tightness for vacuum applications. The helium leak rate of weld joints was found to be 2×10^{-10} mbar.litre/sec. On microscopic analysis, it was also found that the weld beads obtained with 10ms pulse duration met the criteria of good surface appearance without porosity. The HAZ is parallel to the melt zone and had a very small width ranging from 0.05 to 0.1 mm, which is very less as compared to conventional arc welding processes. Width of the weld bead was 0.8 mm with weld penetration depth of 0.5 mm. No porosity and cracks were present. Heating and cooling cycle was controlled by profiling of pulse shape in time domain. Cooling was made slower by ramping the pulse energy slowly in a single pulse and keeping the pulse frequency low (2 Hz only) to avoid fast heating of the sample. When the pulse energy was increased beyond 12 J with 10 ms of pulse duration, surface ablation starts to appear. Similarly, when the pulse frequency was increased with same pulse energy and duration, heating of SMA feedthrough becomes higher. When the gas flow rate is higher than 20 lpm, it also results in crack formation on the surface. When higher gas flow rate was used, crack formation seems to be due to fast cooling by higher gas flow rate and solidification cracking on the surface. After qualification of the samples, four SMA feedthroughs were welded on each of the prototype BPIs. Fig. 5 shows a batch of five such laser welded BPIs each of them having four laser welded SMA feedthroughs with two feedthroughs on each side. These BPIs were tested and successfully qualified in laboratory tests.



Fig. 5: A batch of 5 No. of laser welded SMA feedthrough BPIs after laboratory qualification.

Conclusion: In conclusion, ultra high vacuum compatible laser welding of button electrode (SS316L) at the end of central conductor of SMA feedthrough and SS316L SMA feedthrough on vacuum chamber of BPI was carried out successfully using fiber coupled pulsed Nd:YAG laser for accelerator applications. Effect of laser process parameters such as laser pulse energy, pulse duration, gas flow rate, and spot overlapping on the weld bead geometry was studied. Required weld depth with good surface appearance and leak tightness was achieved. This development on laser welding of SS316L will also be useful in other fabrication processes related to accelerator.

Acknowledgements: Authors are thankful to Shri Aniruddha Bose, PLSC Division, RRCAT for sample testing on UTM. We are also thankful to Chemical Treatment Facility, ACDF and UHVT Section, RRCAT for their support.

References:

1. Kim et al., Journal of Mechanical Science and Technology, 24 (11), 2253-2259 (2010).
2. Y. F. Tzeng, Opt. Lasers Eng. 16, 8-10 (2000).



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24th DAE-BRNS NATIONAL LASER SYMPOSIUM (NLS-24)

Raja Ramanna Centre for Advanced Technology,
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Studies on effect of laser parameter variation on pump-probe reflectivity measurements using a Labview interface

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Introduction:

The optical response of material in picoseconds and subpicosecond time scales can be studied using ultrafast pump-probe techniques. Such ultrafast spectroscopic measurements are essential for understanding and designing materials useful for several optoelectronic applications. In semiconductor multilayered structures, femtosecond laser induced transient reflectivity is a very effective technique to study the carrier dynamics as the substrate opacity at the working wavelength does not impose any constraints on the measurements. Femtosecond laser pulses are generated by mode-locking, the mechanism which favors the formation of a short optical signal with higher peak power in the cavity.¹ It is well known that the spectral width of the laser pulse increases as its time duration shortens. Thus a 100 fs pulse in the visible-NIR spectral region has a spectral width of few nanometers.² Due to such a large spectral width and short time duration, the femtosecond laser is very sensitive to environmental changes. Also because of the way the mode-locking process takes place, the various parameters of the laser pulse like power, pulse width, spectral width etc have a nonlinear functional relation with each other and normalization with respect to any parameter is not appropriate. A set of a time resolved pump-probe experiments typically takes a few hours to complete. For reliable conclusions to be drawn from the data it is essential to check that all laser parameters remain stable during the course of the experiment. This can be done best by measuring and logging the relevant laser parameters concurrently with the experiment.

In this paper we describe the development of a multi-parameter logger and its use in ultrafast spectroscopy experiments. A small part of the laser beam is split off and sent into a specially designed beam monitoring optical setup. This measures several beam parameters like laser power, beam profile at near and far field and position in transverse directions, spectral width, peak wavelength, and temporal profile using using calibrated photo detectors, CCD cameras, spectrometer and autocorrelator. A integrated Labview program has been developed for the measurement, monitoring and logging of the laser beam parameters at a user-defined rate. This beam monitoring system was integrated in a transient reflectivity experiment. Measurements were done by varying one laser parameter in a controlled manner to illustrate the need for multi-parameter monitoring.

Experimental Details:

A detailed diagram of the optical bench setup assembled for the measurement of beam parameters is shown in the Figure 1. A wedge is introduced into the laser beam path near the laser system. Each surface of the wedge reflects nearly 4 % of the laser beam. The transmitted beam (~92%) is used for the experiments. The two reflected beams are used for the beam parameter measurements. One beam is split further into several parts and used for power measurement by a calibrated photodiode, spot size and position measurement with two CCD cameras , and spectral width and peak measurement by a spectrograph. The second beam is sent into an autocorrelator for the pulse width measurement. The output signals of the calibrated photo detector and the

autocorrelator are connected to different channels of the breakout box of a DAQ 6110 card. In the same way the beam profile measurement is done by a CCD camera which is connected to an IMAQ 1410 card. The spectrograph is connected to the PC though a USB port. Both the inputs to the PC are controlled by a “master software” designed in Labview.

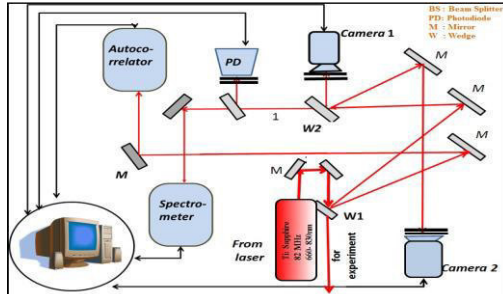


Fig.1: Detailed diagram for the laser beam monitoring system.

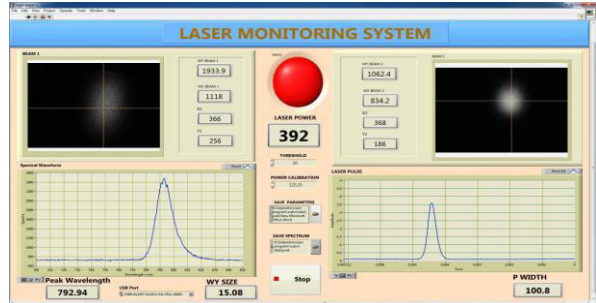


Fig 2: Image of the front panel of the laser monitoring program.

The front panel as displayed on the computer monitor is shown in the Figure 2. The center panel has the laser status indicator, the power output in mW and the menus for user defined file storage locations etc. The button in the center is the laser On/Off status indicator, green and red blinking for ‘ON’ and constant grey for ‘OFF’. The ON/OFF status is decided by the photodiode signal crossing a threshold which can be set by the user. Thus a color change of the button during the experiment immediately warns the user of low power and the experiment can be paused. The two panels on each side display the beam spatial profiles at two locations and spectral and temporal profiles. Along with the spatial profile images, their respective spot sizes and spot position in both X and Y directions are calculated and displayed. Similarly the estimated spectral width and peak wavelength is displayed below the spectrum, and the estimated pulse width below the auto correlation trace. Thus this front panel displays graphical, image and numerical data, all of which are stored which has several advantages. For example, if the laser pulse temporal profile gets distorted by a small satellite pulse, the FWHM measurement may remain the same but the transient reflectivity data would show an anomalous behavior as compared to that obtained with a pulse with smooth profile. If the spectral profile record is not available, there is a likelihood of the anomalous behavior being spuriously attributed to some physical process. However with a full parameter log available, the chances of this kind of mistake reduce significantly.

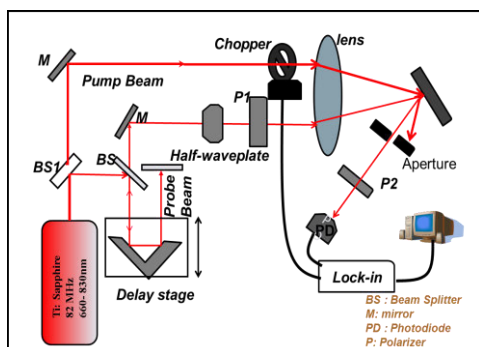


Fig 3: Schematic of the pump-probe transient reflectivity setup.

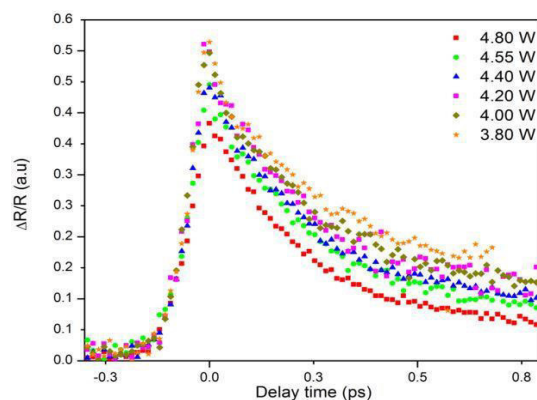


Fig 4: Transient reflectivity curves at different Millenia laser powers.

A detailed diagram of a pump probe reflectivity setup is shown in Fig. 3. Femtosecond laser pulses a

Ti:Sapphire (Tsunami) operating at 82 MHz having pulse width ~ 100 fs is used for this measurement [1]. The wavelength of the laser can be tuned in the range of 750 nm to 850 nm. The output of the laser beam is divided into pump and probe by means of beam splitter BS1 in 5:1 ratio. The pump beam is modulated by a mechanical chopper at 3 KHz. In the path of probe beam a half wave plate is used to rotate its polarization by 90° with respect to that of pump. The pump beam (which excites carriers in sample) and probe (which detects changes in sample) are spatially overlapped on the sample using a single lens. The reflected probe from the sample is detected using photodetector. The output of the detector is connected to a lock-in amplifier which determines the magnitude and phase of the voltage signal at the modulation frequency of the chopper. The optical path length of the probe is changed by the variable delay stage for the measurement of the TR at different pump-probe delays.

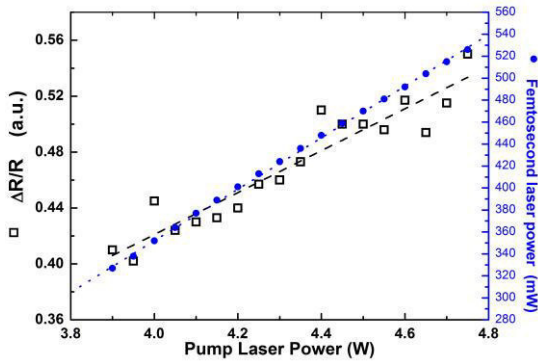


Fig 5: Variation of Peak change in reflectance (Open squares) and femtosecond laser power (dots) as a function of Millennia power. Dashed and dotted lines are the linear fit to respective data.

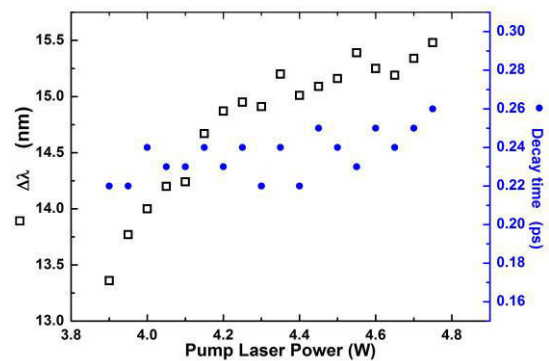


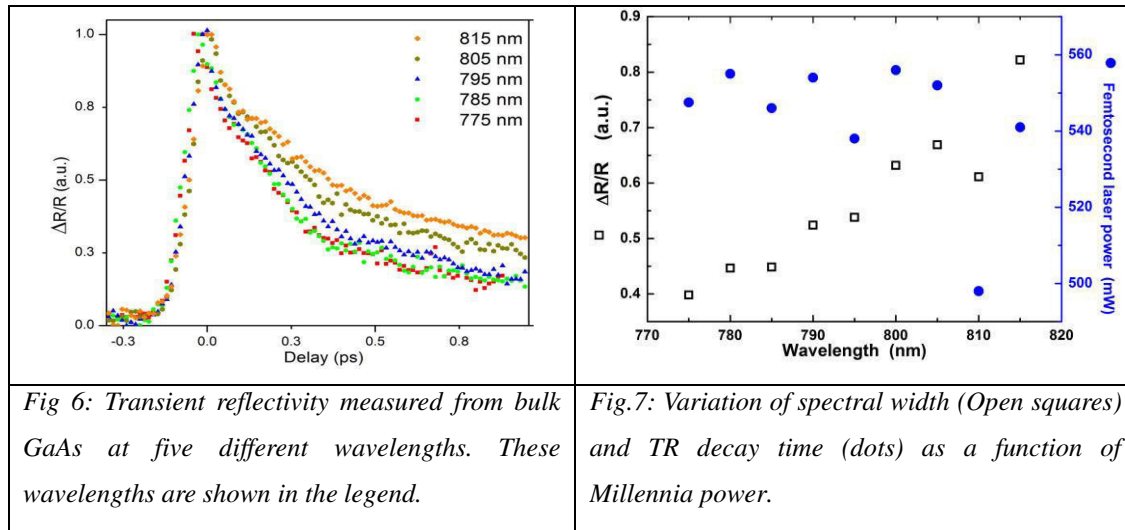
Fig.6: Variation of spectral width (Open squares) and TR decay time (dots) as a function of Millennia power.

Results and Discussions:

To demonstrate the essential need and utility of the beam monitoring system, transient reflectivity experiments were performed on a bulk GaAs sample with simultaneous monitoring of the laser parameters. GaAs is a well-studied material so it was used as a standard sample. One laser parameter was changed in a controlled way and the effect on the transient reflectivity data was studied. In the first study the power of the pump laser (Millenia) for the Ti:Sapphire femtosecond laser was varied from 3.9 W to 4.75 W in steps of 0.05 W. The mode-locking remained stable in this pump power range. Figure 4 shows the normalized transient reflectivity signal ($\Delta R/R$) at various Millenia powers. A plot of the peak signal change with Millenia power (Fig. 5) clearly showed that although the variation is broadly linear, there are jumps at certain power values. To understand this behavior the other logged parameters were also checked. The variation of laser power output, laser pulse width, laser spectral width and beam pointing stability was checked from the logged data. It was found that as the pump power was changed the laser output power increased linearly (Fig. 5). This linear increase in the laser power should have increased the transient signal linearly. However, the parameters like the spectral width ($\Delta\lambda$) varies with the Millenia power in a discontinuous manner (for example see Fig.6). The effect of such changes in the $\Delta\lambda$ on the TR decay time (Fig 6) and magnitude is very complex to understand. Thus, even though the sample response is linear in this regime of pump power, the transient reflectivity measurements do not follow it. Nevertheless the measured changes in the $\Delta\lambda$ clearly shows that both magnitude and decay time cannot be a direct function of only pump laser power. This, however, is not due to any new physical phenomenon taking place in the sample but just the result of a change in laser beam characteristics. This is a

crucial result. It points to the pitfalls which one can encounter while trying to compare data at different powers by simple normalization. The laser beam monitoring system prevents such mistakes as the stability of all parameters can be ensured before comparing two data sets.

The second study was done by performing the transient reflectivity experiments at different laser wavelengths from 775 nm to 825 nm in steps of 5 nm. During this measurement the pump laser (Millenia) power was kept the constant and laser power was not optimized. As wavelength increases the peak change in TR also increases as expected for a GaAs sample. However, there are fluctuations in this which can again be clearly correlated to the laser power recorded by the program during the measurements (Fig.7).



Conclusion:

We have shown how the variation in the femtosecond laser parameters can affect the accuracy of transient reflectivity measurements. To avoid this a multi-parameter laser beam monitoring system has been designed and developed. It consists of an optical setup which requires only ~8% of the laser power. A Labview program has been developed to measure, estimate and log several parameters. The reliability of the program and the measuring system has been checked by performing transient reflectivity measurements on a GaAs sample.

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References:

1. Claude Rulliere (Ed.), Femtosecond Laser Pulses Principles and Experiments, Second Edition, Springer Science, New York, 2003.
2. Tsunami Mode-locked Ti:sapphire Laser User's Manual, Rev. D, Spectra Physics, Mountain View, CA, 2002.
3. J. Jayabalan, A. Singh, R. Chari, S. Khan, H. Srivastava, and S. M. Oak, Appl. Phys. Lett., 94, 181902 (2009).
4. Salahuddin Khan, J. Jayabalan, R. Chari, S. Pal, S. Porwal, T. K. Sharma, and S. M. Oak, Appl. Phys. Lett., 105, 073106 (2014).



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In-situ laser cutting of 18 mm thick triangular blocks of yoke assembly in RAPS-3 reactor

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Abstract:

Here, we report on in-situ laser cutting of 18 mm thick triangular yoke fixing blocks made of SS410 using fiber coupled pulsed Nd:YAG laser in RAPS-3 reactor. It includes development of a miniature laser cutting fixture with precise movement in an arc, CCD camera viewing system, and optimization of laser process parameters for multi-pass laser grooving up to a depth of 18 mm without damaging the yoke. This fixture holds the fiber-optic cutting nozzle and can be fixed on triangular block just by tightening of a single allen key screw from a distance of about 1.5 m. This laser based cutting technique has enormously reduced radiation dose consumption and time. In the absence of this technique, 15 coolant channels which does not have creep provision would have been quarantined, resulted in a power loss of ~75 MU/year.

Introduction

In pressurized heavy water reactor at RAPS#3, the triangular shaped fixing blocks encompass the yoke-stud, in place of rectangular fixing blocks which does not encompass the yoke-stud. Due to presence of this triangular block on floating end of the channel, creep margin of that channel reduces by 18 mm. During biennial shutdown of this reactor, creep measurement of all the coolant channels are carried out. Some of the coolant channels, which have triangular blocks in shock absorber assembly have reached their extreme limit of creep margin on shock absorbing yoke stud. There is no margin left beyond thermal expansion for creep adjustment in these coolant channels. If creep provision is not available, there may be extreme axial load on pressure tubes due to restriction in thermal expansion leading to more sag. It ultimately reduces the operating life of the coolant channel. There are two options envisaged to create space to accommodate axial creep. First is to replace triangular blocks with rectangular blocks and second is to cut the upper portion of triangular blocks which hinders the nut for movement without damaging the yoke thus increase the creep provision by 18 mm. First option was tried but due to space restrictions and radiation dose, it is very almost impossible to replace triangular blocks with rectangular blocks. In view of space, second option of cutting seems to be only feasible option. The cutting of triangular blocks by conventional mechanical methods was attempted by using a remotely operable cutting system. Mechanical cutting trials using saw cutter of these blocks were attempted but found extremely difficult due to requirement of compactness of cutting assembly and increased hardness of these blocks. In few coolant channels, orientation of feeder coupling of adjacent channel is also at the front of the shock absorber stud and end fixing block, so insertion of mechanical cutting tool was not feasible to cut. Thus, a novel approach for cutting of these blocks based on laser cutting technology was conceptualized. Since triangular fixing

blocks and yokes are fixed together, it is not possible to cut through the block as no space is available for removal of debris from the back surface of the block. Thus, it was required to remove the material up to a depth of 18 mm by laser grooving process at an angle. There is hardly any report in literature on laser grooving of SS up to a depth of 18 mm by laser cutting process. In this paper, we report on the development of controlled depth laser grooving process and its in-situ deployment in nuclear power plant. In our earlier report, we had shown laser cutting feasibility study and mock-trials of laser cutting of triangular blocks¹. Now, laser cutting technology has been implemented in-situ at RAPS-3 site. In the absence of this technique, 15 coolant channels would have been quarantined, which could have resulted in a power loss of ~75 MU/year.

Description of laser cutting system:

The laser cutting system consists of fiber coupled pulsed Nd:YAG laser and a fixture to hold laser cutting nozzle. The laser system provides a maximum average output power of 250 W, 100 J of pulse energy, 2-20 ms pulse duration and 1-100 Hz repetition rate. Laser output has been efficiently delivered through a 100 meter long, 400 μm core diameter and 0.22 numerical aperture silica-silica optical fiber with 90% transmission efficiency. This laser system has been equipped with four time shared fiber ports for cutting at different locations. The laser beam diverges at the exit fiber end, which was then collimated and focused using 12.7 mm diameter collimating and focusing lenses having focal lengths of 12.7 mm and 40 mm, respectively, providing an imaging ratio of 3.15 and a focused spot size of 1.26 mm. Large focus spot diameter of 1.26 mm using an imaging ratio of 1:3.15 was selected to enhance depth of focus to 18 mm, so that full depth cutting of 18 mm thick triangular block can be achieved. The laser cutting nozzle was compact and its overall diameter of the nozzle was 20 mm and total length was 120 mm. The gas at high pressure is also fed through this nozzle in the cut location for removal of the molten material. Due to restricted space around the block, linear motion of laser cutting nozzle was not feasible. In view of this, laser cutting nozzle rotates along the triangular fixing block in arc shape in the narrow available space taking reference of the yoke stud. Movement of laser cutting nozzle was carried out using a DC micro-motor and its motion was restricted up to the ends of triangular block by using limit switches. A DC motor controller for motion of tool, which also shows position of nozzle on triangular block was developed and utilized. For fixing of tool, initially a cam type fixing arrangement was designed for mock-up trials in our laboratory. However, due to variation in size of triangular blocks and asymmetric size on both the sides of yoke stud, cam type fixing arrangement was found to be inappropriate. The cam type fixing arrangement for tool was modified to link type tool fixing arrangement, so that it can even work on slightly different size of triangular blocks. A miniature CCD camera based on-line viewing and its easy locking arrangement was also made for remote monitoring of in-situ laser cutting process. As triangular block is fixed with yoke assembly, it is not possible to cut through and through. Thus, laser cutting nozzle was mounted at an angle of 15° with respect to the normal to the triangular block for multi-pass grooving, so that material can be removed at an angle. In the first few passes, laser energy was kept low at 5 J along with low speed, so that a clean groove of about 3 mm depth can be achieved. For further increase in depth, energy was enhanced up to 71 J. Oxygen and compressed air were used as assist gases. For controlled depth grooving up to full depth of 18 mm and 1 mm thick washer without damaging yoke assembly was very critical and it was required to critically optimize process parameters. Initially, O_2 was used as assist gas for easy

removal of material due to oxidation, which forms less sticky debris and energy was slowly increased so that material can be melt at corresponding depths. During final passes, compressed air was used as assist gas, so that better control on depth can be achieved when it is close to yoke assembly as no exothermic reaction takes place. A total of about 26 laser passes were required with variable pulse energy, gas used, and required gas pressure as given in Table 1.

Table 1: Laser cutting parameters.

Sr. No.	Cutting parameter	Pulse energy	No. of passes	Gas and pressure	Cutting speed
1.	200 A, 2ms, 6 Hz	5.7 J	2	O ₂ , 7 bar	20 mm/min.
2.	300 A, 3 ms, 6 Hz	18 J	2	O ₂ , 7 bar	25 mm/min.
3.	300 A, 6 ms, 3 Hz	35 J	4	O ₂ , 7 bar	25 mm/min.
4.	300 A, 10 ms, 3 Hz	59 J	4	O ₂ , 10 bar	25 mm/min.
5.	300 A, 12 ms, 3 Hz	71 J	4	O ₂ , 10 bar	25 mm/min.
6.	300 A, 3 ms, 15 Hz	19 J	4	Air, 6.5 bar	25 mm/min.
7.	300 A, 10 ms, 3 Hz	59 J	4	Air, 6.5 bar	25 mm/min.
8.	300 A, 12 ms, 3 Hz	71 J	2	Air, 6.5 bar	25 mm/min.

The total cutting time for a triangular fixing blocks was ~40 minutes with a cut kerf width of 1.5 mm. During initial cutting passes of low energy, pulse duration was kept low, whereas during passes at Sr, Nos. 4, 5, 7 and 8 with high energy, it was required to increase pulse duration to achieve required pulse energy. However, with increase in pulse duration, heat affected zone and surface roughness were found to slightly increase in comparison with that at low pulse duration. While cutting in-situ, copper sheets were placed just above the triangular fixing block so that laser beam is blocked from reaching on feeder pipes. Fig. 1(a) and (b) show the laser cutting fixture mounted on triangular block and triangular block of yoke assembly with laser cut sections. Figure 2 shows laser cut section of triangular blocks of coolant channel.

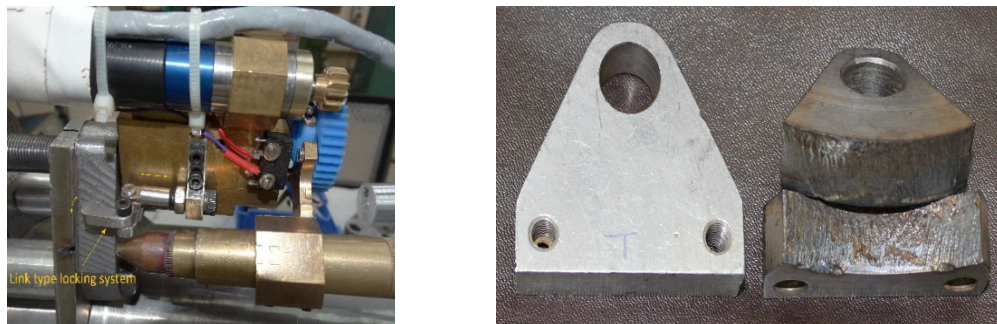


Fig. 1: (a) Laser cutting fixture mounted on triangular block and (b) triangular block of yoke assembly along with its cut sections.

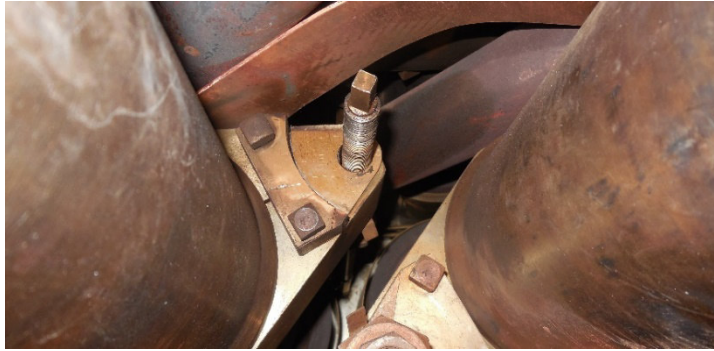


Fig. 2: Laser cut section of triangular blocks of coolant channels.

Conclusion:

In conclusion, we have developed and successfully deployed laser based grooving process for in-situ cutting of triangular blocks of yoke assembly in RAPS-3 reactor. A total of thirty triangular blocks of fifteen coolant channels were cut during two campaigns at RAPS-3 reactor for enhancement of creep margin by 19 mm and thereby enhancing operating life of these coolant channels. It includes development of a miniature laser cutting fixture and optimization of laser process parameters for laser grooving to cut up to a depth of 18 mm without damaging the yoke. Laser based cutting technique was deployed with minimum MANREM consumption and time. This laser cutting technology has been implemented in-situ at RAPS-3 site. In the absence of this technique, 15 coolant channels would have been quarantined, which could have resulted in a power loss of ~75 MU/year.

References:

1. R. K. Jain et al., DAE-BRNS National Laser Symposium-2013, Tirupati, India, NLS-22

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Electron beam induced modifications in third harmonic process of spray coated Mn: ZnO nanostructures

Albin Antony, Poornesh P., I. V. Kityk, K. Ozga, Reji Philip, et al.

Albin Antony, Poornesh P., I. V. Kityk, K. Ozga, Reji Philip, Ganesh Sanjeev, Vikash Chandra Petwal, Vijay Pal Verma, Jishnu Dwivedi, "Electron beam induced modifications in third harmonic process of spray coated Mn: ZnO nanostructures," Proc. SPIE 10919, Oxide-based Materials and Devices X, 1091924 (1 March 2019); doi: 10.1117/12.2516768

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Electron beam induced modifications in third harmonic Process of spray coated Mn: ZnO nanostructures

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Abstract

We report the energetic 8 MeV electron beam induced modification on linear and nonlinear optical process in Mn doped ZnO (MZO) thin films at different irradiation dosage. The modifications incorporated on third order nonlinear optical absorption were studied using Z-Scan technique in both continuous and pulsed laser regime. Open aperture Z-scan measurement indicates that pristine and film treated at 15 kGy electron beam dosages reveals reverse saturable absorption (RSA) mechanism and films treated at 5 kGy, 10 kGy and 20 kGy exhibits saturable absorption (SA) phenomena. The irradiation resulted in a high β_{eff} value of 12.1×10^{-2} cm/W in continuous wave excitation and 5.6×10^{-4} cm/W for pulsed excitation as compared to pristine films. Gaussian deconvolution fitting on room temperature PL spectra shows a quenching of defect centers upon electron beam irradiation. The observed decrement in PL emission intensity for the films treated with energetic electron beam can be probably due to recombination of defect centers and enhanced non radiative defects. The decrease in the energy band gap and increase in the Urbach energy of the MZO thin films was observed due to creation of deep energy levels into the band gap. The irradiation treatment resulted in significant changes on the crucial parameters of optical sensing such as limiting threshold and optical clamping. The present study indicates that nonlinear parameters of MZO thin films can be tuned by choosing appropriate electron beam dosage for photonics applications.

Keywords: E-beam irradiation, MZO nanostructures, Z-scan, Optical limiting

1. Introduction

The advent of photonics based devices in to modern technology has paved the way for the search of novel optical materials with enhanced optoelectronic performance in order to meet the present demand. [1]. With the wide-ranging use of high end laser sources in various applications, an ample concern is presently being focused towards the exploration for novel nonlinear optical materials for optical power filtering which are used to protect human eyes and solid state optical sensors from powerful laser beams. The optical limiting mechanism has arisen from intensity dependent nonlinear-optical processes in materials [2]. Material bottleneck for an ideal optical limiter is problem facing by scientific communities. Many organic materials like dyes, polymers and phthalocyanines etc. are investigated widely for the optical limiting properties. Inorganic materials like semiconductor thin films has gained wide attention in recent times due to its various unique properties and advantages when compared to organic materials. Among the widely investigated semiconductor thin films the ZnO belonging to II-VI group with energy

band gap of 3.36eV has gained a lot of interest due its possible application in various fields especially as a potential material for nonlinear optical devices. The excellent nonlinear behavior exhibited by ZnO nanostructures shows a significant part in various nonlinear device applications such as optical isolators, ultrafast switching, limiters, frequency tripler etc...[3] In the present study host ZnO lattice was doped by Mn with different concentration. Mn has the advantage because of its half-filled 3d orbitals which aids its incorporation into the ZnO lattice and relatively comparable ionic radii between Zn^{2+} and Mn^{2+} . Furthermore apart from doping with suitable element, the existing properties of the material can be modified in favor to various device applications by different methods like annealing, encapsulation, surface decoration and energetic electron beam treatment etc. Up today the researches which details the effect of electron beam treatment on the third harmonic generation process is very limited and requires further in depth analysis. In this context an attempt is made to study the impact of electron beam treatment on nonlinear optical properties of MZO nanostructures.

2. Experimental details

2.1 Preparation MZO thin films

The MZO thin films were grown via chemical spray pyrolysis deposition technique on a glass substrate. Chemical spray pyrolysis is a widely used method of thin film growth where a precursor solution is sprayed on preheated substrate which undergoes thermal decomposition further resulted in the formation of required product. The precursor solution used in the present case were Zinc chloride ($ZnCl_2$) and Manganese chloride tetrahydrate ($MnCl_2 \cdot 4H_2O$). The doping concentration of Mn were fixed to 1 wt% and total concentration of precursor solution was maintained at 0.05M. The substrate temperature of thin film deposition were fixed at 673K throughout the process and flow rate of the solution was maintained at 2ml/min. The glass substrate used for the film growth were undergone standard glass cleaning procedures via acetone, isopropyl alcohol and double distilled water.

2.2 Electron beam irradiation

An 8 MeV electron beam line from a linear accelerator at RRCAT Indore, India were utilized for the irradiation treatment on the grown MZO nanostructure. The dosages for the treatment were fixed at 5 kGy, 10 kGy, 15 kGy and 20 kGy.

2.3 Nonlinear optical Measurements by Z-scan technique

Electron beam induced variations on nonlinear absorptions mechanism was elaborated by employing open aperture z-scan technique [4, 5]. The schematic diagram of experimental set up is shown Fig 1. The measurement were done in both continuous and pulsed laser regime. The measurement in continuous wave regime was done by Helium-Neon laser of 632.8 nm wavelength and input power of 20mW. An Nd: YAG laser with nanosecond pulses (532nm, pulse energy 100 μ J, pulse duration 5ns, pulse frequency repetition 10Hz) were used for the measurement at pulsed regime.

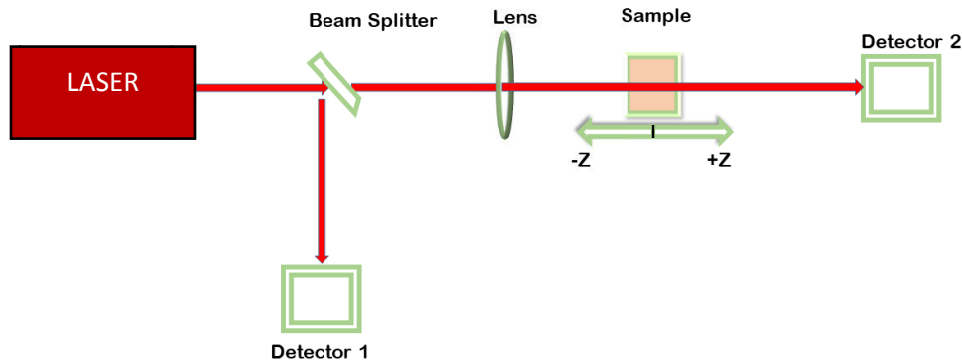


Fig.1 Pictorial representation of z- scan experimental set up

3. Result and discussion

3.1 Linear Optical properties

Fig 2 shows the absorbance spectra of MZO thin films irradiated at different dosages. The process of grain aggregation mechanism observed in the irradiated films give rise to island of grains which enhances optical scattering loss of light. This loss of light tentatively results in the decrease of photon transmission which further results in the increased absorption behavior upon electron beam irradiation.[8]. There is also a spectral red shift in the absorption edge which arised as a result of the inclusion of non-radiative and radiative defect centers in the nanostructures upon irradiation treatment. The shift in the absorption edge also indicates the variation in energy band gap which further elaborated using Tauc relation.

The extrapolation of straight line portion to energy axis will give you the band gap energy of the investigated film as shown in fig 3 [11]. The irradiation via electron beam resulted in a marginal decrement of energy band gap ranging from 3.27 eV to 3.21 eV. This observed variation in the band gap can be accounted on the inception of various structural, native and non-radiative defects centers in the nanostructures. These defects further resulted in the formation deep energy levels in the forbidden gap known as the band tailing [12]. The phenomena can be calculated by evaluating urbach energy values of pristine and irradiated MZO nanostructures. The empirical rule of Urbach energy calculations are given by the exponential equations

$$\alpha = \alpha_0 \exp\left(\frac{h\nu}{Eu}\right) \quad (1)$$

$$\ln \alpha = \ln \alpha_0 + \frac{h\nu}{Eu} \quad (2)$$

In which EU is termed as urbach energy or band tail width of the investigated films. The slope of the straight line shown in fig 4 gives the urbach energy values

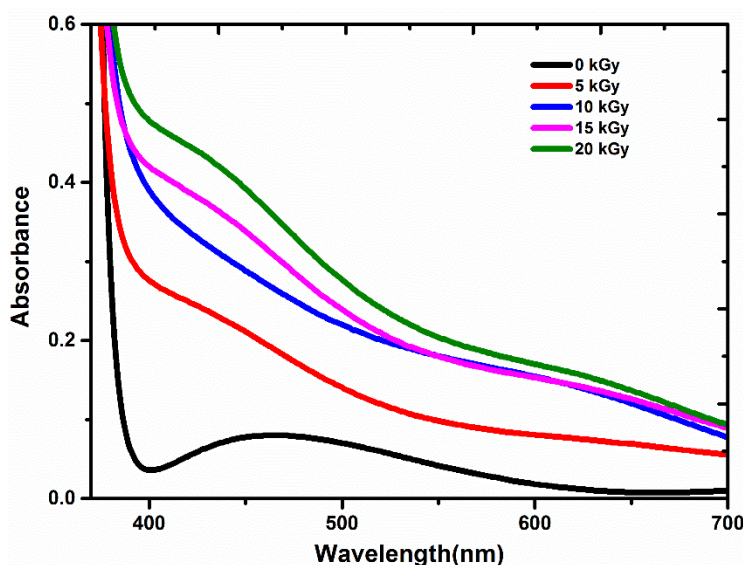


Fig. 2. UV-Vis Absorption spectra of irradiated MZO thin films.

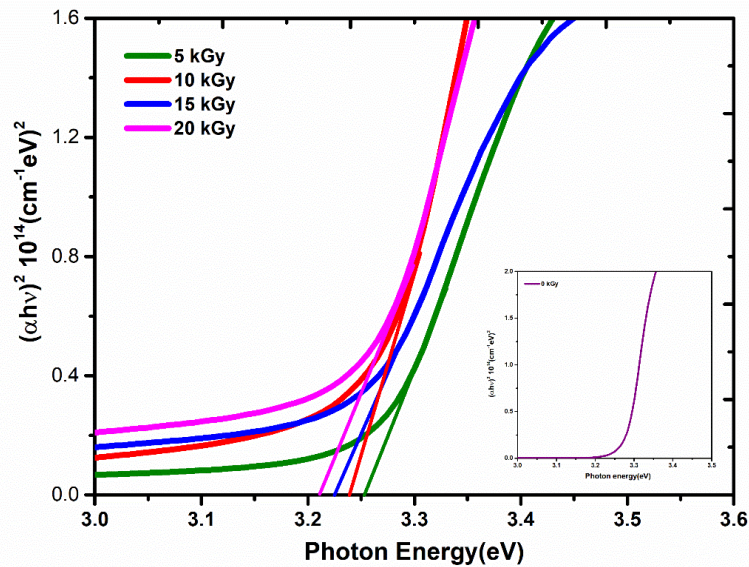


Fig (3) Tauc plot of pristine and Irradiated MZO thin films

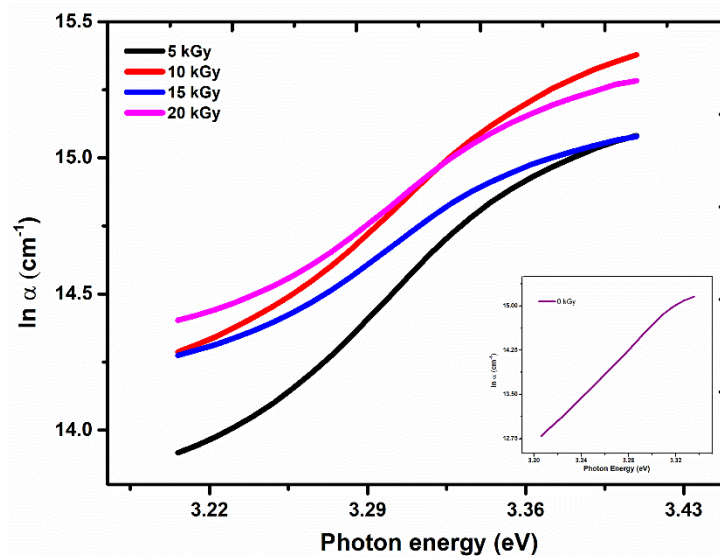


Fig 4 $\ln \alpha$ vs Photon energy plot of pristine and irradiated MZO thin films from which urbach energy is obtained

Table 1. Energy band gap and Urbach energy of MZO thin fil

No	Dosage (kGy)	Band gap(eV)	Urbach energy(eV)
1	0	3.27	0.05
2	5	3.25	0.15
3	10	3.24	0.16
4	15	3.22	0.22
5	20	3.21	0.20

3.2 Photoluminescence spectroscopy studies

Apart from the optical properties PL studies will give an information about the defects such as Zinc and oxygen interstitials, oxygen vacancy, Zinc vacancy and other surface properties [14, 15]. The excitation source used for the PL analysis was a xenon flash lamp at 325nm wavelength. The obtained spectra were shown fig 5. Gaussian deconvolution fitting is performed for obtained PL spectra in order to identify the radiative transitions in the films reflecting different native defect centers. The fitting parameters used to perform the deconvolution was kept uniform for all the spectra. The Gaussian fitting shows existence of luminescent centers which can be attributed to various defect centers presented in the films. The observed color centers and related vacancy defects were identified and reported in table 2. From the observed decrement of PL emission intensity and number emission centers upon irradiation it is understood that the non-radiative defects in the films dominates over radiative defect centers. Furthermore the saturation of PL emission centers observed in irradiated PL spectra can be probably due to the recombination of defect sites [16]

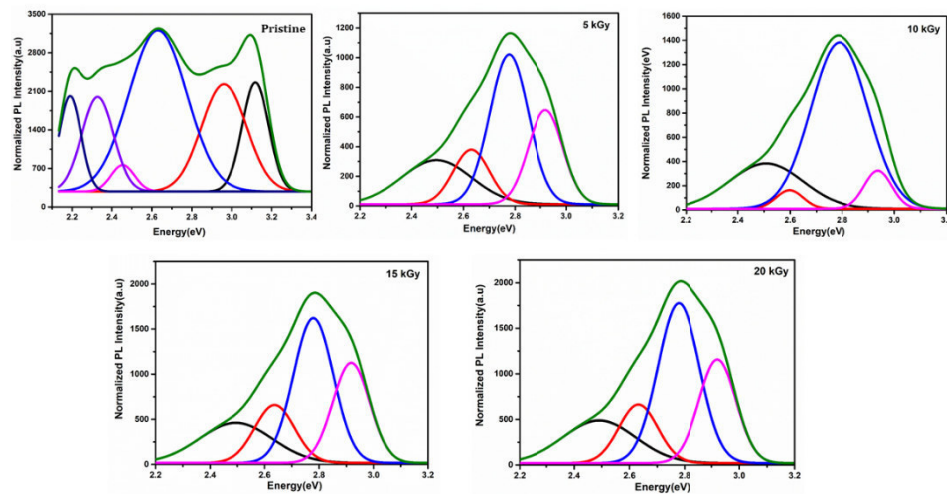


Fig 5. PL spectra of pristine and e-beam irradiated MZO nanostructures

Table 2 PL emission centers and proposed defects

Color Center	Defect origin[14,15]
Violet I	Zinc Interstitial(Zni)
Violet-Blue	Ionized Zinc interstial (Zni+)
Blue	Oxygen antisite defect(Ozn)
Green	Oxygen Vacancy

3.3 Nonlinear Optical Properties

The intensity dependent nonlinear absorption coefficient of pristine and electron beam treated MZO nanostructures were studied by open aperture Z-scan measurement technique proposed by Sheikh bahea *et al* [5, 6]. The analysis is done at both pulsed and continuous wave regime. Open aperture trace of MZO thin films in continuous wave regime are shown in Fig 6. From the signature of the peaks it is understood that the MZO nanostructures exhibit both positive and negative absorption nonlinearity. The positive absorption nonlinearity represents a minimal normalized transmittance at the focus corresponding to reverse saturable absorption mechanism (RSA) and the maximum normalized transmittance at the focus corresponds to negative absorption nonlinearity whose origin is attributed saturable absorption mechanism (SA)

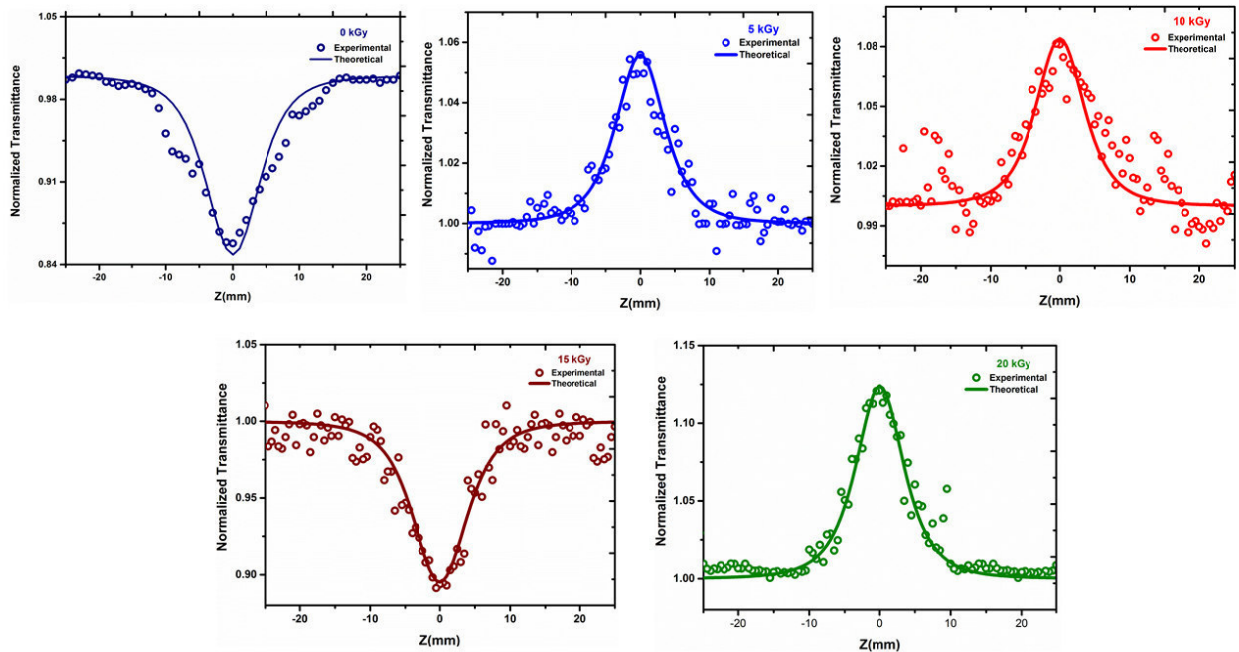


Fig 6. Open aperture trace of MZO thin films in continuous regime

A switching over behavior from RSA to SA is observed due to irradiation treatment. At 15 kGy dosage sample shows RSA behavior which further switched to SA behavior when the dosage is increased to 20 kGy. The reason for this effect can be attributed to the changes occurring in population density of atoms at ground state and excited states upon irradiation. The depletion of ground state population level will result in the switching over from RSA to SA and vice versa [17,18]. These switching over characteristics which is observed enables MZO thin films as a potential candidate for laser pulse narrowing, optical pulse compression and optical switching applications. [19, 20].

Fig 7 show open aperture Z-scan traces of MZO nanostructures measured at different irradiation dosages under pulsed laser regime. A Q-switched Nd-YAG laser (wavelength 532 nm, pulse energy 100μJ, pulse width 5ns) was employed for the measurement. It is observed that the transmittance curve exhibits a clear valley at the focus which can be attributed to RSA, indicating positive absorption nonlinearity. The variations observed in theoretical two photon absorption fit indicates that the origin of nonlinear absorption mechanism in the films can be a combination of excited state absorption (ESA) and TPA [21]. In addition, creation of defect states upon radiation treatment which results in the enhanced absorption mechanism also results in prominent RSA mechanism exhibited by the nanostructures

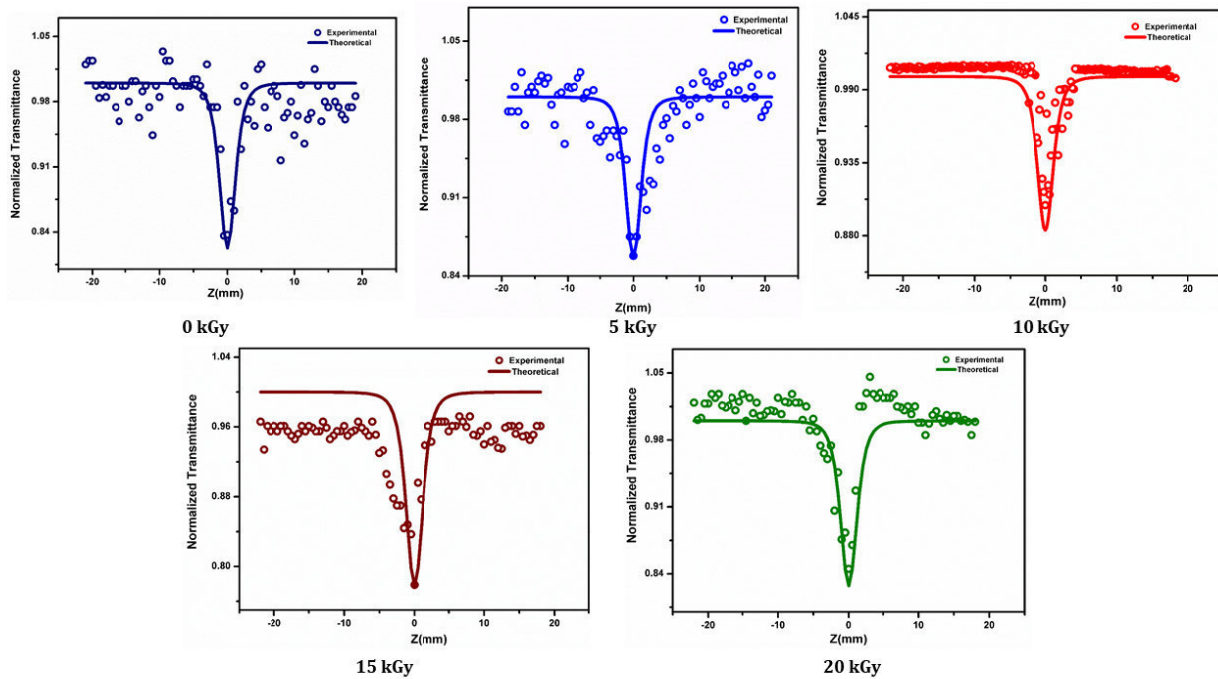


Fig 7. Open aperture trace of MZO thin films in pulsed laser regime

Table 2 Nonlinear optical properties of MZO thin films at different irradiation dosages

Dosages	$\beta_{\text{eff}} (\times 10^{-2} \text{cm/W})$ Continuous regime	$\beta_{\text{eff}} (\times 10^{-4} \text{cm/W})$ Pulsed regime
0 kGy	0.16	1.38
5 kGy	-5	3.2
10 kGy	-7.8	4.1
15 kGy	2.6	5.6
20 kGy	-12.1	4

3.4 Optical limiting Mechanisms

The optical limiting property of the materials rely upon different nonlinear optical mechanisms such as nonlinear refraction, nonlinear absorption, phase transitions and induced scattering [22]. The origin of nonlinear

absorption in semiconductors like ZnO can be due to various phenomena such as two photon absorption, excited state absorption or free carrier absorption. In MZO nanostructures a combined effect of RSA and induced scattering that adds upon to the observed optical limiting mechanism. These property enables the successful shielding of sensitive optical components, including the human eye from laser-induced damage [22, 23] The limiting mechanism of MZO samples irradiated at 5, 10 and 20 kGy which shows a saturable absorption mechanism can be attributed nonlinear refraction and induced scattering effects[2]. Fig 8 shows the optical limiting behavior of MZO thin films irradiated at different dosages. The optical limiting threshold and optical clamping of the samples are found out and tabulated in Table 3. It is evident from the result that tuning of optical limiting properties can be possible upon controlled electron beam irradiation treatment

Table 3 Optical limiting Properties at different irradiation dosages

Dosages(kGy)	Limiting Threshold (mW)	Optical Clamping (mW)
0	7.73	
5	6.23	
10	5.11	
15	4.80	8.50
20	4.30	

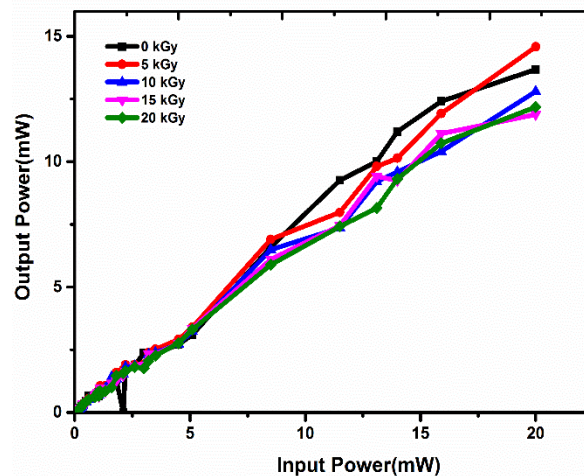


Fig 8. Variations in optical limiting behavior of MZO thin films at different dosages.

4. Conclusions

The effect of electron beam irradiation on nonlinear optical properties of Mn doped ZnO thin films were studied. The exposure to electron beam at different doses ranging from 0kGy to 20 kGy results in the decrease of band gap and increase in the urbach energy of MZO thin films. The electron beam treatment results in recombination of native defects which further results in the reduction of PL emission centers. The open aperture z-scan trace were obtained for both continuous and pulsed laser regime. The irradiated films shows higher β_{eff} value compared pristine film. The 20 kGy treated MZO nanostructure shows lowest limiting threshold value of 4.30 mW compared to others films which indicates the role of radiation treatment in modulating the optical limiting behavior of semiconductor nanostructures

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References

1. Tutt W Lee, Boggess F Thomas , Prog.Quant.Electr,**17**, (1993), 299-338
2. E. W. Van Stryland, Y. Y. Wu, D. J. Hagan, M. J. Soileau, and Kamjou Mansour, J. Opt. Soc. Am. B, **5**, (1988).
3. Cotter D, Manning R.J, Blow K.J, Ellis A. D, Kelly A. E., Nettet D , Phillips I. D, Poustie A. J, Rogers D. C , Science, **286** (1999) 1523
4. M Abd-Lefdil, A Belayachi, S Pramodini, P Poornesh,A Wojciechowski,,A O Fedorchuk, Laser Phys. **24** (2014) 035404
5. Sheik-Bahae M, Said A A, Wei T H, Hagan D J and Van Stryland E W 1990 IEEE. J. Quantum Elect. **26** 760.
6. Sheik-Bahae M, Said A A and Van Stryland E W 1989 *Opt. Lett.* **14** 955
7. A.S. Hassanien, Alaa A. Akl, Journal of Alloys and Compounds **648** (2015) 280-290
8. Ratheesh Kumar P. M, Sudha Kartha C, Vijayakumar K. P, Singh F., Avasthi Mat D. K Sci. Engg. B **117** (2005) 317
9. A.Nestour, M.Gaudon, G.Villeneuve, M.Daturi, R.Andriessen, A.Demourgues A, Inorg. Chem. **46** (2007) 4067-4078
10. S.S.Shinde, P.S.Shinde, S.M.Pawar, A.V.Moholkar, C.H.Bhosale, K.Y.Rajpure, Solid State Sci. **10** (2008), 1209-1214.
11. Antony A, Pramodini, S, Poornesh, P., Kityk, I. V, Fedorchuk, A. O, sanjeev Ganesh Optical Materials **62** (2016), 64
12. K Sirajl , M Kanwal, S Saleem, J D Pedarnig, M S Rafique and S Naseem, Indian J Phys **90** (2016) 1431–1436
13. A.S. Hassanien , Alaa A. Akl, Superlattices and Microstructures **89** (2016) 153-169
14. A.B. Djurisic, A.M.C.Ng, X.Y.Chen Prog. Quant. Elect.**34** (2010) 191
15. Debajyoti Das ,Praloy Mondal RSC Adv, **4** (2014) 3573
16. N. Midya,a S. K. Neogi, b Md. A. Ahmed,a A. Banerjee,ac Pravin Kumar,d D. Kanjilald and S. Bandyopadhyay RSC Adv., **7** (2017) 771
17. B B Laud (1991) “Lasers & Nonlinear optics”, second edition, Wiley Eastern Limited
18. Irimpan, L. M. (2008). Spectral and nonlinear optical characterization of ZnO nanocomposites
19. Li H.P, Liu B, Kam C.H, Lam Y.L, Que W.X, Gan L.M, Chew C.H, Xu G.Q, Opt. Mater. **14** (2000) 321

20. K.K. Nagaraja a, S. Pramodini b, A. Santhosh Kumar a, H.S. Nagaraja a, P. Poornesh b, Dhananjaya Kekuda, *Optical Materials* **35** (2013) 431–439
21. Ke-Xin Zhang, Cheng-Bao Yao, Xing Wen, Qiang-Hua Li and Wen-Jun Sun, *RSC Adv.*, 8 (2018), 26133
22. Rajeswari Ponnusamy, Dhanuskodi Sivasubramanian, P. Sreekanth, Vinitha Gandhiraj, Reji Philip and G. M. Bhalerao, *RSC Adv.*, 5 (2015), 80756-80765
23. Benoy Anand, S. R. Krishnan, Ramakrishna Podila, S. Siva Sankara Sai, Apparao M. Rao and Reji Philip, *Phys.Chem.Chem.Phys.* 16 2014 8168



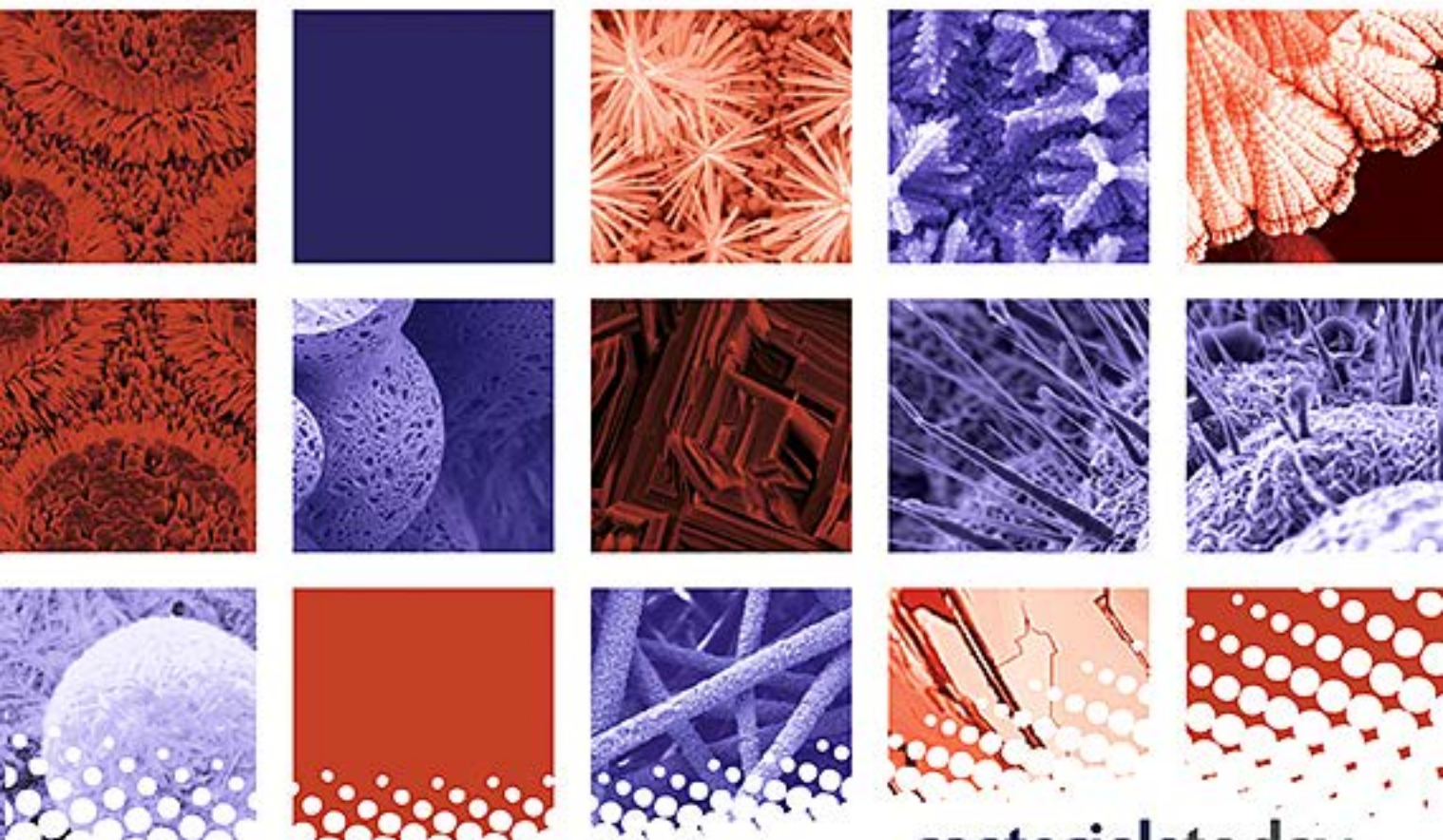
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Role of Trapped Electrons on Global Gyrokinetic Linear Stability of Collisionless Microtearing Modes

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Abstract. Unstable collisional MicroTearing Mode (MTMs) have been found in experiments of high- β Spherical Tokamaks and are believed to be driven by drift resonance of trapped electrons. It has been recently shown that at large aspect ratio, the magnetic drift resonance of highly passing electrons is a minimal mechanism to drive the collisionless MTM unstable. In this work, a preliminary study of inclusion of trapped electrons in large aspect ratio tokamaks indicate that for the reference parameters investigated, the collisionless MTM retain their essential mode structures, while growth rates are only moderately affected.

1. Introduction

Microtearing modes (MTMs) are low frequency, high- n electromagnetic microinstabilities in Tokamak plasmas. The mode draws free energy from the electron temperature gradient and is excited above a threshold gradient. Thus, if found unstable, it is envisaged to open up an important channel of electron transport. These modes exhibit tearing parity, i.e. odd parity in electrostatic potential and even parity in parallel magnetic vector potential and rotate in the electron diamagnetic direction. Early analytical work predicted these modes to be unstable only in collisional plasmas [1, 2, 3]. Recent gyrokinetic simulations have found unstable collisional MTMs in various magnetic confinement configurations such as spherical tokamaks with very high β values in collisional or semi-collisional regime [4, 5, 6, 7, 8], standard tokamaks, such as ASDEX-Upgrade [9, 10], and weakly collisional Reversed Field Pinch plasmas [11, 12]. These linear gyrokinetic simulations, using a local flux-tube implementation, have thrown light on several characteristics of the mode, typically for high β and relatively moderate electron temperature gradient length scales. The connection to experimentally observed





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Studies of thermal behavior on activated carbons for the selection of regeneration scheme

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Abstract

Activated carbon is the most potential candidate for the sorption of various gases including hydrogen and helium. Because of its large internal surface area greater than 1000 m²/gm, activated carbons in different forms are widely used in many industries like gas and liquid purification, fuel storage and chemisorption. Recent progress of vacuum and cryogenic technologies leads to the wide application of activated carbons in sorption cryopumps. Cryopump is defined as a kind of entrapment vacuum pump which captures the gas by surfaces cooled to temperatures below 120 K and hence after a certain operational time there is a need of regeneration. To define the regeneration scheme of the newly developed sorbents thermo-gravimetric analysis were carried out to study their thermal behavior. Based on the thermal behavior and the regeneration gas loads the required regeneration temperature needs to be fixed. Hence a system is established and experiments were carried out to know the thermal behavior of different forms of activated carbons. Before performing thermal degassing the sample chamber with activated carbon samples are also evacuated to a pressure less than 10⁻³ mbar for the natural desorption to take place. Studies were carried out for knitted fabric, granular and spherical charcoal samples. It was observed that evacuation increases desorption by 1.5 to 2 times. From the thermal studies it was estimated that after heating till 100^oC followed by continuous evacuation 80-95% of gases are removed from the sorbent. Therefore degassing or regeneration above 100^oC will not be much effective for regeneration.

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Keywords: Activated carbon; regeneration;vacuum

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[Application of ECH to the Study of Transport in ITER Baseline Scenario-like Discharges in DIII-D](#) 02003

R.I. Pinsker, M.E. Austin, D.R. Ernst, A.M. Garofalo, B.A. Grierson, J.C. Hosea, T.C. Luce, A. Marinoni, G.R. McKee, R.J. Perkins [et al. \(7 more\)](#)

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[High power ECRH and ECCD in moderately collisional ASDEX Upgrade Hmodes and status of EC system upgrade](#) 02004

J. Stober, F. Sommer, C. Angioni, A. Bock, E. Fable, F. Leuterer, F. Monaco, F. Müller, S. Münich, B. Petzold [et al. \(21 more\)](#)

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[Experimental characterization of plasma start-up using ECRH in preparation of W7-X operation](#) 02005

M. Preynas, D. Aßmus, H. Igami, S. Kado, S. Kobayashi, S. Kubo, H.P. Laqua, T. Mutoh, K. Nagasaki, M. Otte [et al. \(3 more\)](#)

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[Long Pulse EBW Start-up Experiments in MAST](#) 02007

V.F. Shevchenko, Y.F. Baranov, T. Bigelow, J.B. Caughman, S. Diem, C. Dukes, P. Finburg, J. Hawes, C. Gurl, J. Griffiths [et al. \(6 more\)](#)

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[42GHz ECRH assisted Plasma Breakdown in tokamak SST-1](#) 02008

B. K. Shukla, S. Pradhan, Paresh Patel, Rajan Babu, Jatin Patel, Harshida Patel, Pragnesh Dhorajia, V. Tanna, P K Atrey, R Manchanda [et al. \(7 more\)](#)

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[Performance History and Upgrades for the DIII-D Gyrotron Complex](#) 02009

J. Lohr, J.P. Anderson, M. Cengher, R.A. Ellis, Y.A. Gorelov, E. Kolemen, T. Lambot, D.D. Murakami, L. Myrabo, S. Noraky [et al. \(3 more\)](#)

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[Machine safety issues with respect to the extension of ECRH systems at ASDEX Upgrade](#) 02010

Martin Schuberta, Albrecht Herrmann, Francesco Monaco, Volker Rohde, Harald Schütz, Jörg Stober, Thomas Vierle, Stefan Vorbrugg, Dietmar Wagner, Dieter Zasche [et al. \(2 more\)](#)

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[Recent Upgrading of ECRH System and Studies to Improve ECRH Performance in the LHD](#) 02011

Hiroe Igami, Shin Kubo, Takashi Shimozuma, Yasuo Yoshimura, Hiromi Takahashi, Shuji Kamio, Sakuji Kobayashi, Satoshi Ito, Yoshinori Mizuno, Kohta Okada [et al. \(7 more\)](#)

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[A megawatt-level 28 GHz heating system for the National Spherical Torus Experiment Upgrade](#) 02013

G. Taylor, R.A. Ellis, E. Fredd, S. P. Gerhardt, N. Greenough, R. W. Harvey, J. C. Hosea, R. Parker, F. Poli, R. Raman [et al. \(5 more\)](#)

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[Real-Time Feed-backed Anode Power Supply for 170GHz gyrotron in KSTAR](#) 02014

Bong-Jun Seok, Il-kun Ahn, Seung-kyo Lee, Eun-yong Shim, Young-soon Bae, Mi Joung and Jin-Hyun Joung

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[Study of Synergetic Effect of X2 and X3 EC Wave in KSTAR](#) 02015

Y.S. Bae, J. Decker, J.H. Jeong and K.D. Lee

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[Demonstration of sawtooth period control with EC waves in KSTAR plasma](#) 02016

J. H. Jeong, Y. S. Bae, M. Joung, D. Kim, T. P. Goodman, O. Sauter, K. Sakamoto, K. Kajiwara, Y. Oda, J. G. Kwak *et al.* (5 more)

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[Feedback-controlled NTM stabilization on ASDEX Upgrade](#) 02017

J. Stober, L. Barrera, K. Behler, A. Bock, A. Buhler, H. Eixenberger, L. Giannone, W. Kasparek, M. Maraschek, A. Mlynek *et al.* (8 more)

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Hiroshi Takahashi, Shin Kubo, Takashi Shimosuma, Hiroe Igami, Yasuo Yoshimura, Satoshi Ito, Sakuji Kobayashi, Yoshinori Mizuno, Kohta Okada, Shuji Kamio *et al.* (5 more)

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G. Taylor, M. E. Austin, J. H. Beno, S. Danani, R. F. Ellis, R. Feder, J. L. Hesler, A. E. Hubbard, D. W. Johnson, R. Kumar [et al. \(10 more\)](#)

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[Engineering aspects of design and integration of ECE diagnostic in ITER](#) 03006

V.S. Udintsev, G. Taylor, H.K.B. Pandya, M.E. Austin, N. Casal, R. Catalin, M. Clough, B. Cuquel, M. Dapena, J.-M. Drevon [et al. \(20 more\)](#)

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[Correlation ECE diagnostic in Alcator C-Mod](#) 03007

C. Sung, A. E. White, N. T. Howard, D. Mikkelsen, J. Irby, R. Leccacorvi, R. Vieira, C. Oi, J. Rice, M. Reinke [et al. \(9 more\)](#)

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F. Albajar, G. Aiello, S. Alberti, F. Arnold, K. Avramidis, M. Bader, R. Batista, R. Bertizzolo, T. Bonicelli, F. Braunmueller et al. ([76 more](#))

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Takayuki Kobayashia, Shinichi Moriyama, Akihiko Isayama, Masayuki Sawahata, Masayuki Terakado, Shinichi Hiranai, Kenji Wada, Yoshikatsu Sato, Jun Hinata, Kenji Yokokura [et al. \(2 more\)](#)

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H. Idei, S. Moriyama, T. Kobayashi, A. Isayama, M. Sakaguchi and W. Kasperek

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W. Kasperek, B. Plaum, C. Lechte, Z. Wu, H. Wang, M. Maraschek, J. Stober, D. Wagner, M. Reich, M. Schubert [et al. \(16 more\)](#)

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T. Shimosuma, S. Kobayashi, S. Ito, Y. Ito, S. Kubo, Y. Yoshimura, M. Nishiura, H. Igami, H. Takahashi, Y. Mizuno [et al. \(2 more\)](#)

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D. Wagner, W. Bongers, W. Kasperek, F. Leuterer, F. Monaco, M. Münich, H. Schütz, J. Stober, M. Thumm and H. v.d. Brand

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Satoshi Ito, Takashi Shimosuma, Yasuo Yoshimura, Hiroe Igami, Hiromi Takahashi, Masaki Nishiura, Sakuji Kobayashi, Yoshinori Mizuno, Kota Okada and Shin Kubo

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New approach to ECE measurements based on Hilbert-transform spectral analysis

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Abstract. Spectroscopy of Electron Cyclotron Emission (ECE) has been established as adequate diagnostic technique for fusion research machines. Among various instruments for ECE diagnostics, only Fourier-transform spectrometers with Martin-Puplett interferometers can measure electron cyclotron radiation in a broadband frequency range from 70 to 1000 GHz. Before these measurements, a complete system including a front-end radiation collector, a transmission line, an interferometer and a radiation detector should be absolutely calibrated. A hot/cold calibration source and data-averaging technique are used to calibrate the total ECE diagnostic system. It takes long time to calibrate the ECE system because of the low power level of the calibration source and high values of the noise equivalent power (NEP) of the detection system. A new technique, Hilbert-transform spectral analysis, is proposed for the ITER plasma ECE spectral measurements. An operation principle, characteristics and advantages of the corresponding Hilbert-transform spectrum analyser (HTSA) based on a high- T_c Josephson detector are discussed. Due to lower NEP-values of the Josephson detector, this spectrum analyser might demonstrate shorter calibration times than that for the Martin-Puplett interferometer.

1 Introduction

The measurement of the cyclotron radiation provides the plasma electron temperature profile and also used to study various phenomena in plasma physics like temperature fluctuations, non-thermal electrons population and power losses due to ECE. The ECE measurement diagnostic has been established as adequate diagnostic technique for fusion research machines. Therefore, measurement of this diagnostic is proposed for the ITER plasma.

There are many techniques for the measurement of the cyclotron radiation.

Among them, superheterodyne radiometers and Martin-Puplett interferometers are very popular and used for ECE measurements in a majority of fusion research machines [1]. The radiometers have a limited frequency bandwidth, determined by an intermediate frequency (IF) band width and a frequency of local oscillators, e.g. from 100 to 200 GHz. A combination of an optical-mechanical Fourier-transform spectrometer, based on a polarizing-type Martin-Puplett interferometer, with a broadband cryogenic detector is used for broadband ECE measurements. Here, the usual cryogenic detector is an InSb hot-electron bolometer, which operates in an optical cryostat at the temperature of 4.2 K.



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was observed at room temperature from ZnO QDs of all sizes which shifted towards blue with decreasing mean size of ZnO QDs due to putative quantum confinement of excitons. Theoretically calculated values of ground state energy of excitons confined in ZnO quantum dots embedded in alumina matrix using variational calculation matched reasonably well with the observed PL peak positions indicating that the observed UV emission is intrinsically size dependent and arise due to quantum confinement of excitons. The observed efficient room temperature UV PL and size dependent tuning of emission wavelength indicates that this material system may be an ideal candidate for use in tunable UV emitters and laser diodes.

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Studies on highly conducting Ga doped ZnO thin films grown by pulsed laser deposition for plasmonic applications

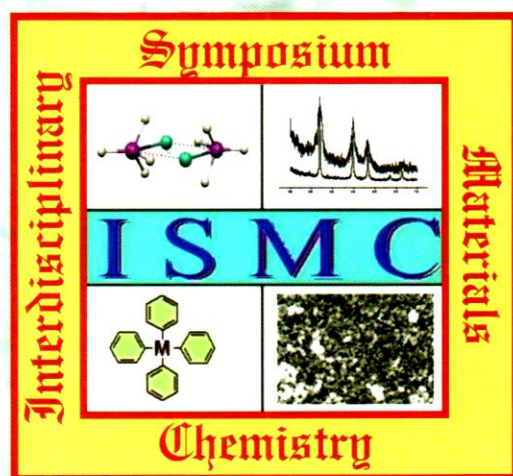
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We have grown Ga doped ZnO (GZO) thin films with Ga concentrations in the range varying from 0.25 to 3 at.% on sapphire substrates using buffer assisted pulsed laser deposition. The carrier concentration of the GZO thin films initially increases to a value of $\sim 2.9 \times 10^{21} \text{ cm}^{-3}$ for ~ 0.75 at% Ga concentration and beyond this concentration, the carrier concentration decreases gradually. In the same way, plasma resonance frequency increases with increase of Ga concentration up to 0.75 at% and beyond which it decreases. All the as-grown GZO thin films are highly transparent with transmission percentage above 80 % in the visible spectral range. Transmission percentage (at 1500 nm) reduces significantly to $\sim 13\%$ with increase of Ga concentration up to 0.75 at%. Beyond 0.75 at% of Ga concentration, transmission percentage (at 1500 nm) increases. This suggests that transmission percentage (at 1500 nm) decreases with increase of plasma resonance frequency. This surprising reduction in transmission percentage at and above 1500 nm is due to increased reflectance as induced by increased plasma resonance frequency of free electron gas. This makes GZO thin films a promising candidate in NIR plasmonics applications, smart windows etc. It can also be seen that band gap of GZO thin films increases to a maximum value of ~ 3.7 eV at a Ga concentration of ~ 0.75 at % and then decreases upto 3.6 eV at ~ 3 at% of Ga doping. It is interesting to note that the functional forms of the dependence of band gap of GZO thin films on Ga concentration and variation of carrier concentration of GZO thin films with Ga concentration are nearly similar. This clearly suggests that the observed variation of band gap can be explained considering the combined effect of Burstein Moss (BM) band gap shift and band gap narrowing.

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Dispersed Fe₂O₃ Catalysts for Sulfuric Acid Decomposition - The Solar Energy Utilization step in Hybrid Sulfur Cycles for Solar Thermochemical Hydrogen Generation

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The development of catalytically active and simultaneously thermally stable nanoscale oxide catalysts for high temperature sulfuric acid decomposition reaction remains a challenging task. Sulfuric acid decomposition is the highest temperature step in the sulfur based solar thermal hydrogen generation processes viz. hybrid-sulfur and iodine-sulfur thermochemical cycles.[1-2] We earlier investigated the catalytic activities of various iron oxide based materials like iron oxide, doped iron oxides, spinel ferrites and perovskite ferrites [3-5] The catalytic activities were also compared with conventional platinum based catalyst.[6] Recently, in an alternative approach to develop catalytically active and thermally stable nanosized materials for the above application, Fe₂O₃ nanoparticles immobilized on a suitable high surface area support (SiO₂) was exploited. Further to evaluate any effect of support, Fe₂O₃ was dispersed over various other supports viz. TiO₂, ZrO₂ and CeO₂ and their efficacy for the above reaction was studied. The catalytic activities were correlated with their structural, morphological, redox and thermal properties by proper characterization of the fresh and the spent catalysts. The dispersion and nanoparticulate nature of the Fe₂O₃ was found to be crucial in obtaining encouraging catalytic activity while pore confinement and active phase-support interaction played a key role in stabilizing the catalyst composition. In the presentation a comparative evaluation of the dispersed Fe₂O₃ catalysts would be presented and their advantages and drawbacks would be discussed. These findings would be inspiring the rational design of anti-sintering dispersed Fe₂O₃ nanoparticles for high temperature catalytic applications. Finally, results from the demonstration of solar thermochemical sulfuric acid decomposition in a cavity type reactor using heat from the concentrated solar irradiation from a solar dish would also be presented.

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References:

1. K.Onuki et al, *Energy Environ. Sci.*, 2009, 2, 491-497.

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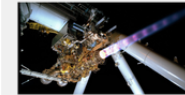
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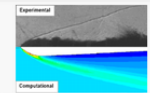
Abstract

CFD simulations (k- ϵ and LES) have been performed for the flow generated in a cylindrical bubble column having a height of HD = 1000 mm with inner diameter of D = 150 mm and provided with sieve plate sparger. The superficial velocity was 20 mm/s. It is known that the computationally cheaper models such as k- ϵ model have many simplifying assumptions which limit their accuracy. Therefore, conservation equations for turbulent kinetic energy (k) and turbulent energy dissipation rate (ϵ) were derived from the governing equations of continuity and motion using two fluid model. For this purpose, Reynolds averaging has been employed. Both the conservation equations consists of terms corresponding to the rates of (a) convective transport, (b) diffusive transport, (c) turbulent transport, (d) production and (e) dissipation. Each of these terms consist of several correlations of mean and fluctuating velocities, mean and fluctuating pressures and their gradients. The values of all these correlations have been estimated by using the values of mean and fluctuating components of velocity, hold-up and pressure, obtained from LES simulations, by taking appropriate precautions. These estimations are expected to be useful in understanding the gravity of assumptions made in the standard k- ϵ model.

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